

PA Dept of Conservation and Natural Resources



1979

MICHIGAN RECREATION PLAN

333.78
M5

1979 MICHIGAN RECREATION PLAN

Prepared By

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

Howard A. Tanner, Director

O. J. Scherschligt, State Liaison Officer

Joseph Seavey, Chief, Recreation Services Division

John Kennedy, Head, Planning Section

Preparation of this document was financially aided by a planning grant from the Heritage Conservation and Recreation Service, U. S. Department of the Interior.

Lansing, Michigan



Digitized by the Internet Archive
in 2017 with funding from

This project is made possible by a grant from the Institute of Museum and Library Services as administered by the Pennsylvania Department of Education through the Office of Commonwealth Libraries



WILLIAM G. MILLIKEN
GOVERNOR

STATE OF MICHIGAN
OFFICE OF THE GOVERNOR
LANSING

May 24, 1979

Mr. Frank Jones, Regional Director
Heritage Conservation and Recreation Service
Lake Central Region
Federal Building
Ann Arbor, Michigan 48107

Dear Mr. Jones:

I am pleased to transmit our 1979 Michigan Recreation Plan. We believe this document reflects the emphasis expressed in the new guidelines for certification recently issued by the Heritage Conservation and Recreation Service.

Michigan's 1979 Recreation Plan has taken a step forward in providing a more comprehensive analysis of recreation. This broader and more comprehensive view provides us with a better basis for identifying issues and developing recommendations to address them. Recreation survey efforts have been invaluable in providing us with a better basis for analysis of recreation and a more comprehensive view concerning needs.

The 1979 Plan has been developed with a degree of citizen involvement at several points. The results of this particular input are summarized in the Introduction. This letter certifies that opportunity for public involvement has been provided. The Department of Natural Resources will continue efforts to this end in the coming year of the new program. This emphasis should be tempered carefully with our ability to present information to the public that is factually based as well as our ability to evaluate this input objectively. It is important that we take care to guard against possible overemphasis with special interest concerns. The new planning guidelines need to be managed carefully in this regard.

We look forward to a continued partnership with the Heritage Conservation and Recreation Service and other Federal agencies in the pursuit of mutual goals.

I urge your favorable consideration of the 1979 Michigan Recreation Plan.
Kind personal regards.

Sincerely,

William G. Milliken
Governor

CONTENTS

	Page
LIST OF TABLES	ii
LIST OF FIGURES	iii
INTRODUCTION	1
CHAPTER 1. ISSUES, POLICY RECOMMENDATIONS AND MANAGEMENT ACTIONS	6
Overall Recreation Goals	6
A. Geographic Priority	6
B. Population Group Priority	8
C. Recreation Financing	9
D. Recreation Planning and Research	10
E. Coordination with Recreation-Related Functions	11
F. Recreation Resource Protection	12
CHAPTER 2. STATE AND FEDERAL RECREATION PROGRAMS	14
Department of Natural Resources Division Programs	14
Urban Recreation Program	22
Federal Recreation Programs	32
State Land Management Programs	34
Water Quality and Recreation	38
Air Quality and Recreation	39
Endangered and Threatened Species	40
Special Populations	40
National Wild and Scenic Rivers	41
Historic Preservation	42
CHAPTER 3. MICHIGAN'S RECREATION RESOURCES	43
Water Resources	43
Climate	45
Flora and Fauna	45
Federal Recreation Resources	45
State Recreation Resources	47
Local Recreation Resources	49
Private Recreation Resources	50
Recreation Resources by Region	51
Local Government Recreation	56
CHAPTER 4. RECREATION PARTICIPATION BY MICHIGAN RESIDENTS: PRESENT AND FUTURE ...	61
Michigan Resident Recreation in 1976	61
Population Influences on Future Recreation Participation	74
Leisure Time Trends	78
APPENDICES	81
Appendix A-Supplemental Reports	81
Appendix B-Additional Data	82
Appendix C-Directory of Governmental Units and Private Organizations	89
INDEX	91

LIST OF TABLES

Table	Page
1. Michigan Department of Natural Resources Wildlife Division Land Acquisition by Program and Development Budget by Region, 1979-84	15
2. Michigan Department of Natural Resources Forest Recreation Development Programs and Land Acquisition Budget by Region, 1979-84	16
3. Michigan Department of Natural Resources Fisheries Division Development Programs and Land Acquisition Budget by Region, 1979-84	17
4. Michigan Department of Natural Resources Parks Division Development and Land Acquisition Budget by Region, 1979-84	18
5. Michigan Department of Natural Resources Waterways Division Development and Land Acquisition Budget by Program and Region, 1979-84	20
6. Michigan Department of Natural Resources Requested Urban Recreation Budget by Funding Source and Region, 1979-80	30
7. Major Cities in Michigan's Eleven SMSA's	30
8. Michigan's Historic Preservation Program, 1978-79	42
9. Michigan Public Recreation Land by Agency	49
10. Michigan Public Recreation Land by Agency and Region	52
11. Michigan Public Park Land by Agency and Region	52
12. Michigan Public Recreation Operation Expenditures by Region, 1975-76	53
13. Michigan Public Recreation Capital Outlay Expenditures by Region, 1975-76	54
14. Regional Inventory of Selected Michigan Recreational Opportunities, 1977	55
15. Change in Michigan Local Government Recreation Operations Expenditures, 1972-76	56
16. Change in General Fund Share of Michigan Local Government Recreation Operations Budget, 1972-76 ..	56
17. Change in Michigan Local Government Recreation Employment 1972-76	56
18. Michigan Local Government Recreation Operations Funding Sources, 1976	57
19. Michigan Local Government Recreation Capital Outlay Expenditures, 1976	58
20. Michigan Local Government Recreation Capital Outlay Funding Sources, 1976	58
21. Michigan Local Government Recreation Facility Standards	59
22. Michigan Recreation Participation Rates in Selected Activity Categories by Region, 1976	66
23. Recreation Participation Rates in Selected Activity Categories for Residents of Michigan Central Cities, Other Urban Areas, and Nonurban Areas, 1976	66
24. Michigan Recreation Participation by Provider for Activity Categories, 1976	70
25. Michigan Total Recreation Participation by Region of Destination and Provider, 1976	71
26. Michigan Participation Rates by Age, Sex and Income, 1976	71
27. Projected Change in Michigan Recreation Participation by Activity Category, 1976-2000	78
28. United States Average Work Week	78

LIST OF FIGURES

Figure	Page
1. Michigan Planning Regions	5
2. Urban Resource Areas	31
3. Michigan Water Resources	44
4. Federal Recreation Resources in Michigan	46
5. State Recreation Resources in Michigan	47
6. Percent of Public Recreation Land in Michigan by Region	51
7. Michigan Water Resources Index by Region	55
8. Michigan Recreation Participation Rates by Age, 1976	62
9. Michigan Recreation Participation Rates by Income, 1976	62
10. Michigan Population and Total Recreation Participations, 1975-76	62
11. Michigan Recreation Participation Rates by Region of Residence, 1976	63
12. Michigan Recreation Participation Rates by Activity Category, 1976	63
13. Michigan Recreation Participation Rates by Age in Selected Activity Categories, 1976	64
14. Michigan Recreation Participation Rates by Income in Selected Activity Categories, 1976	65
15. Michigan Recreation Participation Occurring Outside Home County, 1976	67
16. Michigan Recreation Participation Outside Home County for Selected Activity Categories, 1976	67
17. Michigan Participations in Camping and Visiting Sites by Region of Destination, 1976	68
18. Percent of Michigan Recreation Participations by Provider, 1976	69
19. Recreation Expenditures by Type, 1976	72
20. Michigan Resident Recreation Expenditures by Household Income Group, 1976	72
21. Michigan Resident Recreation Expenditures by Region of Residence, 1976	73
22. Michigan Recreation Expenditures—Net Gain or Loss by Region, 1976	73
23. Michigan Population Projections by Age for 1975, 1985 and 2000	74
24. Projected Michigan Population Change by County, 1975-2000	75
25. Projected Michigan Population Change in Percent by County, 1975-2000	76
26. Average Hours Per Week Spent In Leisure-Time Activities by Selected United States Urban Population Groups, 1965-75	79



introduction



Despite the accomplishments made in acquisition, development and protection of Michigan's recreation resources, much remains to be done. Some communities have inadequate parks and recreational facilities. Imbalances exist in the distribution of federal, state and local government lands and facilities, providing substantial advantages to some communities and disadvantages to others.

Lack of funding for development and operational support is a major problem for local governments and for the Department of Natural Resources (DNR). Michigan is witnessing a changing population base with more elderly people, less young people and continued urban to suburban shifts. It is generally accepted that the tax base in many communities, especially older cities, is declining while costs for services increase. The **1974 Michigan Recreation Plan** predicted that the support base for local recreation systems was in trouble. That prediction has been borne out by the declining level of financial support for local recreation programs. In attempts to combat this revenue shortfall, more use has been and is being made of various federal funds.

Deteriorating tax bases in older cities have spurred strong attempts to revitalize central cities to make them more attractive for private investment and improve their environments. Detroit, Grand Rapids and Lansing are examples where such efforts are underway. Urban rivers have

been key to these efforts, capitalizing on improved water quality, aesthetic enhancement and land that can be otherwise acquired. An underlying consideration in these projects is the compelling need for adequate public recreational opportunities. Support from all levels of government will be needed to create them.

Although the lion's share of Michigan's problems are urban-related, rural communities also have economic needs that must be considered. The state has a number of rural areas where unemployment is high and income low, and where nonresident or seasonal demands result in additional burdens on local resources. In addition to major improvements in air and water quality, some serious environmental problems exist such as toxic chemicals.

The Need for Public Action in Recreation

This plan clearly shows that residents of Michigan's older central cities have low recreation participation rates. Residents of other regions whose participation rates are also low, travel considerable distances at considerable expense to recreate. There is strong evidence that these conditions relate to inadequate recreation opportunity. This points out a need for public action.

It is recognized, too, that in many situations it will not be possible to bring the recreation to within a few minutes of all our citizens, although much can and must be done to provide local recreation opportunities. Recreational opportunities must be provided by the public sector because:

1. A large portion of private recreation is available to only certain groups or individuals.
2. Private land open to public use in the past is rapidly being developed and/or closed to public use, particularly in and near population centers.
3. Many private recreation opportunities are too expensive for low income families.

It is not the private sector's responsibility to address imbalances in recreation opportunity. This is a public responsibility, acting through local, state and federal government agencies.

Purpose of This Document

The **1979 Michigan Recreation Plan** is the basis for Michigan's certification by the Heritage Conservation and Recreation Service, United States Department of the Interior. Certification enables Michigan to participate in the federal Land and Water Conservation Fund program (No. 1, Appendix A.)¹ Michigan's Land and Water Conservation Fund appropriation is \$10.2 million for fiscal year 1978-79.

¹Throughout this plan references of supplemental publications and information are made in the text and listed in Appendix A.

This state's recreation planning efforts date back to 1965, when Congress passed legislation (P.A. 88-578) establishing the Land and Water Conservation Fund. This legislation requires each state to have comprehensive outdoor recreation plans acceptable to the Heritage Conservation and Recreation Service, and an official liaison officer having authority and responsibility to represent and act for the state in regard to the Land and Water Conservation Fund Act of 1965.

Outdoor recreation responsibility for the Michigan Department of Natural Resources was established by Act 316, P.A. of 1965. This act states the Department "is authorized to prepare, maintain and keep up-to-date a comprehensive plan for the development of the outdoor recreation resources of the state." Act 316 also gives the department express authority to participate in "any federal program respecting outdoor recreation," and "coordinate its activities with and represent the interests of all agencies and subdivisions of the state having interests in the planning, development and maintenance of outdoor recreation resources and facilities."

The main purpose of this document is to provide a basis for policy direction and a foundation for guiding and setting priorities on program development. This document presents major issues and problems confronting resource management, identifies important needs concerning recreation resources and recommends actions to meet them. The **1979 Michigan Recreation Plan** has been prepared for use by the Legislature, citizens, private interest groups and all government agencies concerned with the recreation resources of Michigan.

Information Concerns About Recreation

This plan provides information and analysis developed through several years of effort, and takes a new approach to establishing recreation needs and priorities. It was recognized that previous attempts lacked information required to define recreation needs and set priorities. Therefore, this planning program was designed to close key information gaps, such as:

1. The previous definition of recreation, limited to 21 activities, which was too narrow. This made it hard to define the scope of recreation. How can needs be examined or participation even defined while excluding **most** of what people do with their leisure time?
2. The relationship between where recreation occurs and who provides it, which was not known.
3. Information on recreation expenditures, which was not available.

Although these information gaps have been largely filled, more must be learned about potential recreation development opportunities and their impact.

Recreation Planning Approach

Defining and determining needs are critical factors in recreation planning. The most significant change in the approach is that the recreation needs analysis relies heavily upon a very broad definition of recreation as:

Anything done mainly for pleasure or enjoyment, **except** inside a private home. This includes cultural and entertainment activities, as well as activities which are social, group, civic, craft, and hobby-oriented as long as they are done mainly for pleasure or enjoyment **outside** the private home.

Considering this definition as representing the total participation "activity-choice" of the public, then dividing this by the population provides a measure of recreation opportunity participants took advantage of. The state average participation rate based on "all" activities thus provides an "index" from which to compare regions. There were 206 different recreation activities developed by using this definition of recreation. Three basic methods used in the needs analysis are summarized below.

1. *Space and Facility Standards*: These are standards developed by professional organizations, modified for application to local government recreation at the regional level. Although standards may not reflect individual community circumstances, they are valuable in helping to establish local needs.
2. *Expressed Needs*: These are recreation needs expressed by interest groups, citizens and community leaders. Public participation was obtained through several statewide surveys to obtain opinions concerning several recreation issues. Surveys were also conducted in Southeastern Michigan, where about half of the state's population resides. These surveys were conducted among local government, private school and church administrators to determine community recreation services, problems and needs.
3. *Comparative Needs*: These are needs established by analysis of variations in opportunities and recreation participation rates for each of Michigan's 14 planning regions. The comparisons of lands and facilities in conjunction with comparisons of recreation participation identify which regions merit priority.

All three approaches were used in preparing this plan. Most of the analysis and recommendations hinge on comparative needs identified by the 1976 Michigan recreation survey and various recreation resource inventories. Consideration must be given to allow a certain amount of local needs to be defined through the grant applications process.

Citizen Recreation Surveys

Public Opinion Surveys

The 1976 recreation survey, which provided the recreation information based on a broad definition, also gathered public opinion on various recreation related topics. Throughout the 12 months in which the survey was conducted, responses were sought from the heads of the household on various recreational issues. These provided information on the following subjects:

Public Preference for Financing Recreation Programs:

- Half of the respondents preferred "user fees and charges" as the primary means of financing public recreation; 36 percent preferred a combination of "user fees and charges" and "general taxes"; and 13 percent preferred "general taxes."
- Respondents were also asked their opinions on three alternative methods of financing improved public recreation facilities. Use of a share of the state gasoline tax revenue received the highest preference rating, with 58 percent in favor, 37 percent opposed and 5 percent unsure. By comparison, an excise tax on recreation equipment drew a 52 percent favorable response, 43 percent negative and 5 percent unsure. A \$2 motor vehicle license plate increase received the least support, 57 percent against, 40 percent for and 3 percent unsure.
- Half of the respondents wanted increased or improved kinds of recreation; such as parks, camping or swimming facilities. Eighty-two percent of these respondents were willing to pay a user fee for such improvements (No. 2, Appendix A).

Vacation Preference of Michigan Residents:

- Sixty-two percent of the respondents planned to take a vacation in the next 12 months. Thirty-five percent planned to vacation in Michigan; 55 percent outside of Michigan and 10 percent outside the United States.
- The qualities sought most in a Michigan vacation were: water, camping, good fishing and scenery. Those planning vacations outside of Michigan desired proximity to friends or relatives, desirable scenery or climate (No. 3, Appendix A).

Public Opinion on the Michigan Department of Natural Resources:

- Respondents gave high marks to DNR performance regarding state parks, fishing, state forests and hunting. Lowest ratings were to the department's water pollution and air pollution control efforts.

- The percentage of respondents with an opinion on seven specific topics (fishing, conservation law enforcement, recreation trails, state parks, wildlife or hunting, air or water pollution, and land use planning) ranged from a high of 24 percent for "air or water pollution" to 14 percent for "fishing." The opinions most often expressed were for better pollution control, maintenance of state parks, and improved fishing opportunity (No. 4, Appendix A).
- Although much progress has been made in improving both air and water quality, respondents thought more should be done. Public opinion may or may not be based on fact, but what the public perceives is crucial in gaining support for programs. Thus, keeping the public fully and factually informed must be of major concern to the DNR.

Factors Producing Changes in Recreation Participation Over Time:

- Sixty percent of the respondents reported no change in their amount of time spent recreating over the last two to three years, while 22 percent reported an increase and 18 percent a decrease. Major reasons given for increased participation were: more time (26 percent), new activities or equipment (20 percent), children older (11 percent) and greater interest or desire (11 percent). Decreased participation was attributed to economic factors (except gasoline prices) (22 percent), less time (22 percent), poorer health (20 percent), gasoline prices (9 percent) and small children (7 percent).
- Thirty-five percent of respondents reported that increased gasoline costs had reduced their recreation activity, while 49 percent selected places closer to home to recreate because of gasoline costs. Fifty-two percent said they recreated less and 45 percent switched to lower cost activities because of inflation and general economic conditions (No. 5, Appendix A).

Local Recreation Administrators Survey

The DNR, in cooperation with the Detroit Joint Recreation Committee, conducted a study of recreation problems in Region 1.¹ From a list of 15 separate broad-issue categories, local government administrators identified new outdoor facility development, program funding, senior citizen services, facility expansion and improvements and reliable revenue sources as most important.

¹Region 1 includes Wayne, Oakland, Macomb, St. Clair, Livingston, Washtenaw and Monroe counties. The Detroit Joint Recreation Committee represents a number of private and public interests in the Detroit metropolitan area. Formed in the 1960's, it continues to function as a communication link among various recreation interests.

Of nine possible state actions to address issues, these administrators identified state grants for facility development, greater flexibility in use of grant funds, and a state grant program for operational assistance as most beneficial.

Private school administrators identified maintenance of existing facilities, senior citizen services and public safety at facilities as their major concerns. Of nine possible state actions, development of recreation facilities near the major population centers, state aid to public and private schools, and financial incentives for demonstration programs to the private sector were identified by private school administrators as the most important (No. 6, Appendix A).

Public Meetings on Draft State Recreation Plan

After substantial public notification, meetings were held throughout the state to provide the public an opportunity to review and comment on the draft state recreation plan. Comments expressed at these meetings included:

- Some citizens and local government personnel expressed a need to finance recreation based on the user pay concept. Objections to user pay were voiced by those who thought they were getting limited facilities for the fees paid. Exchange of comments brought acknowledgement of some existing user pay problems. For example, certain population segments may be excluded from participation if there is a heavy reliance on user fees.
- Concern from Upper Peninsula government agencies about too much recreation emphasis on Southern Michigan, indicating that the Upper Peninsula also had needs that could not be met with current funding allocations. Northern local agencies interpreted the plan's recommendations as a potential threat to the tourist industry in Northern Michigan.
- Some citizens expressed thanks for the opportunity to express their views and comments on the plan, with some expressing the desire to participate in future recreation planning efforts.
- Positive support for protection of the state's natural and historical resources was expressed. Several citizens asked how they could help.
- Support for educational efforts to promote wise use of natural resources was also expressed.

The majority of people reviewing this plan chose not to comment. This does not necessarily indicate support, but negative positions did not emerge from the majority who attended the meetings and received notices.

Coordination of Recreation Plan

Responsibility for providing recreation opportunities and managing natural resources is divided among numerous federal, state, local and private interests. Responsibility for coordination of this plan rests with the Recreation Planning Section, Recreation Services Division, DNR.

Government agencies and others who either reviewed and/or provided input into this plan include: The Forest Service, U. S. Department of Agriculture; National Park Service; Fish and Wildlife Service; and Heritage Conservation and Recreation Service, U. S. Department of the Interior; the Michigan departments of Commerce, Education, Social Services, Management and Budget, and Governor's Executive Office; the Michigan Townships Association; Association of Counties; Municipal League; Recreation and Park Association; Governor's Recreation Advisory Committee and Michigan United Conservation Clubs. Appendix C page 89.

Michigan Planning Regions

The regions in the **1979 Michigan Recreation Plan** are those established by the Executive Office as Official Planning and Development Regions. For the purposes of this plan, Regions 1, 7 and 8 have been subdivided because the different subregions vary significantly in character. Region names are derived from the major urban center (Fig. 1).

MICHIGAN PLANNING REGIONS

1. Detroit
 - A. Wayne Co.
 - B. Oakland / Macomb Cos.
 - C. Outer counties
2. Jackson
3. Kalamazoo - Battle Creek
4. Benton Harbor - St. Joseph
5. Flint
6. Lansing
7. Saginaw - Bay City
 - A. Central
 - B. Thumb
 - C. North
8. Grand Rapids
 - A. South
 - B. North
9. Alpena
10. Traverse Bay
11. Sault Ste. Marie
12. Escanaba - Marquette - Iron Mt.
13. Houghton - Ironwood
14. Muskegon

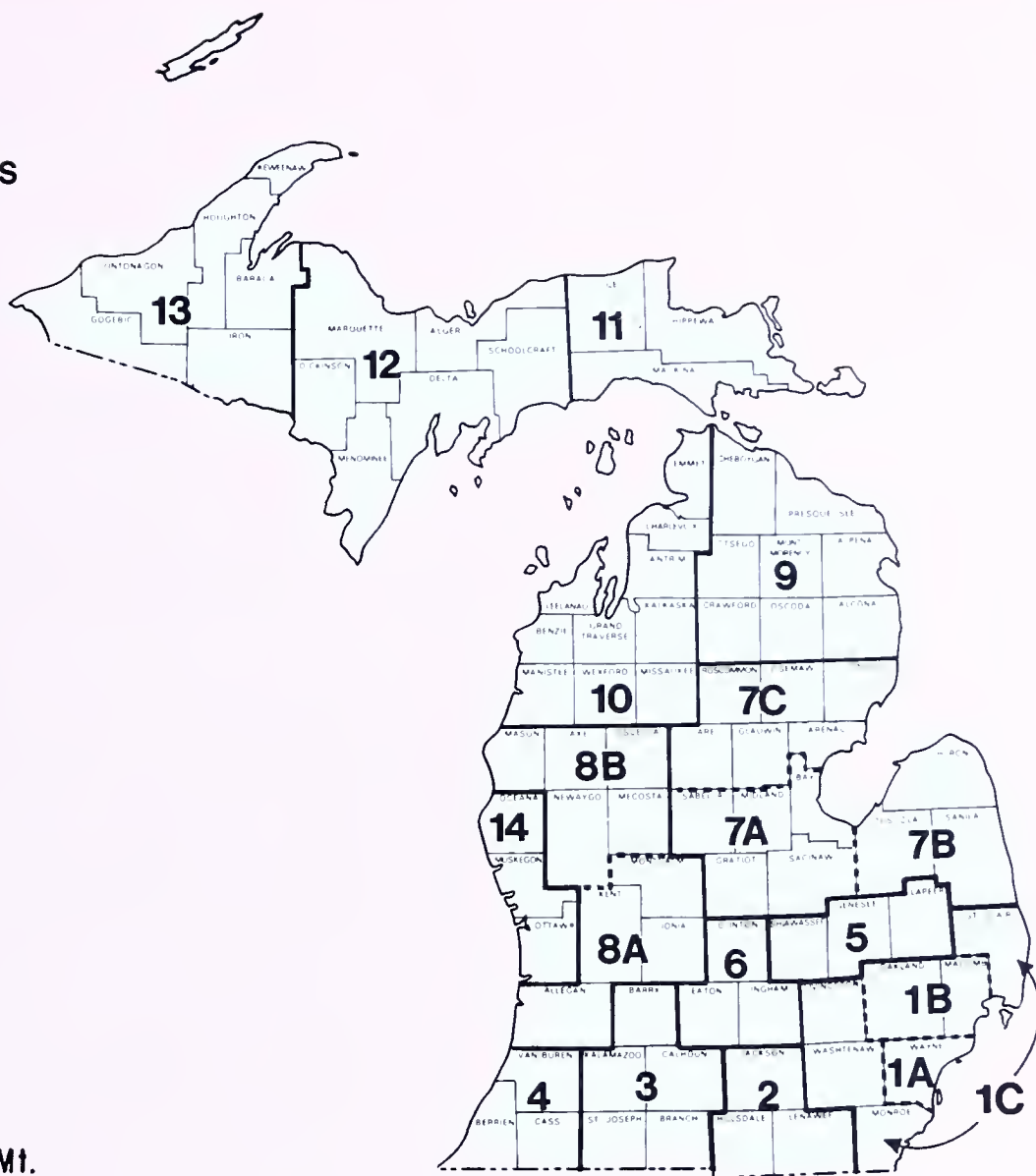


FIGURE 1



**issues, policy recommendations and
management actions**

1

sion with recreation related programs are described in Chapter 2.

Overall Recreation Goals

1. Provide recreation opportunity to serve human needs for physical, mental and social well-being, with emphasis on those areas of the state deficient in participation and opportunities.
2. Maintain practical recreation and resource planning processes at the federal, state and local levels that incorporate citizen participation, the private sector and state-local-federal partnership.
3. Enhance, promote and protect Michigan's natural and cultural environments through wise use and management, recognizing their role in social well-being.
4. Expand recreational opportunities in Michigan's populous areas, where problems are greater and needs more immediate.

A. Geographic Priority Issues

1. **Some regional populations exhibited recreation participation rates substantially below the state average.** Substantial differences exist in the total recreation participation rates among various regions. The residents of Planning Regions 1A, 2, 4, 5 and 7B were found to have recreation participation rates well below the statewide average. Similar analysis indicated that residents of central cities of Michigan Standard Metropolitan Statistical Areas generally exhibited the lowest participation rates.
2. **Certain regional populations exhibited an above average recreation participation export rate.** High export rates were exhibited by residents of Regions 1B, 6, 7A, 8A and 14. Residents looking for local recreation opportunities either did not recreate or travelled beyond their home counties to satisfy their recreation needs. If desire is strong enough and they can afford it in terms of cost and time, this is not necessarily negative. Transportation to the resource is a possible—though not always workable—method of bringing the resource closer to people.
3. **Government response to the large differences in population distributions and natural resources as they apply to recreation opportunities has been less than it could be.** There are large differences in the per capita amounts of federal and state lands among the regions. Significant differences also exist at the regional level among the shares of participation provided by federal, state and local agencies.



This chapter describes the major recreation issues confronting Michigan and recommendations for public agency response. The main issues are described under the following major categories: A. Geographic Priority, B. Population Group Priority, C. Recreation Financing, D. Recreation Planning and Research, E. Coordination with Recreation-Related Functions, and F. Recreation Resource Protection.

For each category:

1. its related **issues** are presented;
2. a **policy recommendation** follows, indicating the basic nature of the needed response to the issues; and
3. the final statements are specific **management actions** to implement the policy recommendation.

The order in which the categories are presented does not indicate their relative importance. Most issues are derived from information presented in subsequent chapters. Others reflect concerns of the DNR and the general public. Recommendations indicate broad policies that should be adopted by Michigan's public recreation providers to respond to the issues, with direction to specific government levels where appropriate. The proposed management actions do not include all possible actions that could be taken to implement the policies, but indicate only major actions needed.

Four broad statewide goals are listed below, describing general responsibilities as "keepers" of the public trust rather than exactly when or how this trust is to be maintained. More specific goal statements for each DNR divi-

4. **The natural resources in Northern Michigan have traditionally received the greatest emphasis for development.** These recreation resources are accessible to most Michigan residents only at considerable cost in time and money. Michigan's densely populated southern regions have a smaller share of the state's water resources on a per person basis compared to the northern regions. Other physical recreation resources such as forests, hills and mountains are also not evenly distributed. Public programs have not sufficiently emphasized developing to the fullest possible extent the recreation potential of the limited physical resources in Southern Michigan, particularly the Southern Michigan Great Lakes shoreline.
5. **Private lands are being closed to public use at an alarming rate.** More private lands are being posted against public use, resulting in more pressure on public resources particularly in Southern Michigan. Reasons behind the growing reluctance of private owners to allow public use of their land include, but are not limited to: confusion over landowner liability, a new state trespass law, rising property values that make owners more "protective," lack of respect by some individuals for the rights and property of the landowner and a lack of incentive for the private landowner to allow public use of his land (No. 7, Appendix A).
6. **Rapid development of available open space will continue reducing potential recreation sites, particularly in high population growth areas.** Valuable agricultural lands and wetlands continue to be lost to competing uses. Regional and state controls are inadequate to assure the future availability of these areas as potential recreation resources. There is no long-range comprehensive or even short-range development plan to guide state and local development. A state land use plan that establishes the basis for local, state and federal funding priorities is the backbone for development decisions.

One result of rapid and unguided development is destruction of valuable plant communities and animal habitat, and the recreation potential attached to them. The many local-level park and recreation developments of the past 50 years are commendable, but cannot compare with the city beautiful movement early in this century, with many fine parks and boulevards established. The Detroit metropolitan area continues to benefit from lands acquired through this foresight and initiative. Unfortunately, this type and level of initiative no longer occurs. The land development rate is especially rapid in St. Clair, Livingston, Lapeer, Oakland and Genesee counties. Although some high quality recreation sites remain and excellent state, regional and local parks exist, communities may be developed without parks and recreation facilities unless steps are taken now to set aside land. Local organization and

financial capability to accomplish this is lacking. Without incentives, the private sector cannot be expected to respond. State government must accept responsibility for dealing with this issue.

7. **Recreation needs will be affected by the projected geographic pattern of population change.** Most of Michigan's population increases by the end of this century will be in metropolitan areas. Almost half of the net increase will be in the Region 1 counties surrounding (but excluding) Wayne County. Important percentage increases in nonmetropolitan areas, especially the Northern Lower Peninsula, will also increase these areas' share of total population. State and federal acquisition, development and grant support programs must anticipate these changes when planning to meet future recreation needs. The recreation needs of areas declining in population or having difficulty with economic development and stability also cannot be ignored. This situation is not unique to Michigan's older central cities, but is an important consideration in other parts of the state.

Policy Recommendation

State, federal and local programs should attempt where feasible to bring about greater geographic equality of recreation participation and opportunity. This should be an objective in grant assistance to local government, and for state and federal acquisition, development and resource protection programs. If constrained by existing funds, recreation programs should focus on the central cities of Michigan's Standard Metropolitan Statistical Areas and other priority regions. Primary reasons for emphasizing these regions are low recreation participation rates by residents and the low share of recreation opportunity provided by state and federal agencies. Secondary reasons include high export (participation outside home county) and recreation spending by residents, lack of water resources relative to population, low shares of state and federal land, lack of recreation facilities, rapid loss of potential recreation resources and major population change. Southern Michigan urban regions exhibit these characteristics to the greatest extent. This policy recommendation does not suggest that development and grant assistance should only occur in or go to central cities. Projects with regional impact may be most effective, depending on circumstances.

Management Actions

1. **The DNR will continue to assure that its Parks, Fisheries, Waterways and Wildlife division programs address the lack of recreation participation and/or state provided opportunities in Southern Michigan.**

2. **The state will assure that the limited water resources of Southern Michigan are used as effectively as possible in meeting recreation needs.** The most important step in this regard is to assure public access to as much of the resource as possible where use can be accommodated without adverse effects. At the same time, water quality must be enhanced and protected, overdevelopment and filling must be prevented, and fisheries must be protected and developed. An expanded landowner compensation program is needed to fund low cost provision of recreation opportunities on private land. Access rights for cross-country skiing, pond and riverbank fishing, ORV use, and horseback trails are but a few of the activities such a program could provide.
3. **Existing national forest lands can accommodate additional recreation use.** Attention should be devoted primarily to development that will better suit existing and future needs for forest related recreation. Acquisitions should be directed to unique resources, particularly those threatened by damage or loss from uncontrolled use or development, not simply to expand national forest lands.
4. **The Heritage Conservation and Recreation Service of the U.S. Department of Interior should help the DNR secure additional federal funds in support of an expanded land acquisition and development program for Southern Michigan.**
5. **Public agencies should work cooperatively to address regional and urban recreation deficiencies by recognizing and emphasizing these needs.**
6. **State and local agencies should increase public information efforts, particularly in priority areas, to increase public awareness of available recreation opportunities.**
7. **State and local agencies should initiate recreation skill development programs in priority areas.** Such programs would enable more citizens to take advantage of available recreation opportunities.

For example, females participated much less than males in overall recreation activity. This may well be due to program emphasis on competitive sports by local recreation agencies and less leisure time available to the increasing number of working women. Obviously, more study is needed in this area to provide agencies with the information needed to bring about an appropriate increase in the female participation rates. Senior citizens had lower participation rates than younger age groups, although the increased leisure time accompanying retirement should result in higher recreation participation rates for the elderly. It appears that an important recreation need is not being addressed adequately. It is believed that transportation problems are a factor in curbing recreational participation by the elderly, and for those of low income.

2. **Many recreation facilities are not suited to the needs of the handicapped.** Medical, educational and sociological advances enable handicapped persons to live fuller, more active lives. In the future, the handicapped will probably make up a larger share of the population recreating, as medical advances enable more people to survive accidents, illnesses and birth defects, thus increasing average life span. Recreation facilities are not always suited to the needs of the handicapped person. Information on programs and facilities required by the handicapped, and the cost of providing them, is presently inadequate to determine precisely what should be done.
3. **Significant changes in population age distribution will influence future recreation needs.** Population trends point to more older and middle-aged Michigan residents and fewer young people. This will greatly influence demand for various types of recreation. Participation in such youthful activities as swimming, competitive sports and bicycling may show little growth or decrease, while participation is expected to increase sharply in fishing, yard work and gardening. If recreation agencies do not anticipate and respond to these changes, a serious lack of such recreation opportunities will exist in the future.

B. Population Group Priority Issues

1. **Certain population groups exhibit recreation participation rates substantially below the statewide average.** Results of the Michigan 1976 recreation survey show that those of lower income, the elderly and females recreate much less than other citizens. Reasons for these differences are many. Some are obvious but others will be discovered only through further studies of recreation needs of various population groups. Government has a basic responsibility to see that recreation needs not met by the private sector are addressed through public recreation programs.

Policy Recommendation

State, federal and local programs should reduce differences in recreation participation among income and age groups, and between males and females, that result from differences in recreation opportunities. Recreation opportunity and accessibility for the handicapped will be improved. Equal participation rates for everyone may not be possible. For example, higher participation rates for children are largely due to their abundant leisure time. Government agencies should sponsor research to identify more precisely the influence of various factors on participation rates. This is especially impor-

tant regarding age differences in participation, because of the great changes occurring and expected to continue in the age structure of Michigan's population. At the same time, agencies should pursue innovative and imaginative approaches to assist special populations to participate in more recreation.

Management Actions

1. **Public agencies should develop and program recreation facilities to better respond to the recreation needs of senior citizens, low income people and the handicapped.**
2. **Public recreation agencies should emphasize programs that cost less but serve more people.**
3. **State and local agencies should aim public information efforts at priority groups, such as the handicapped, senior citizens, low income persons and females, to increase their awareness of available recreation opportunities.**
4. **State and local agencies should initiate recreation skill development programs directed particularly to priority population groups. Such programs would increase their ability to take advantage of available recreation opportunities.**
5. **Public transportation to existing recreation facilities should be provided. Development decisions for new facilities must carefully weigh facility accessibility.**
6. **Because development and acquisition expenditures represent major investments, recreation decisions should anticipate long-term changes in the age structure of Michigan's population, which will alter needs for various recreation activities.**
7. **Public agencies should periodically survey the people they serve to stay abreast of recreation preference changes.**

C. Recreation Financing Issues

1. **Public recreation financing problems will continue with public resistance to taxes, particularly if current inflation rates continue.** Passage of the "Headlee" legislation in Michigan in 1978, which restricts government spending to correspond with personal income, is an example of resistance to increasing government expense without ability to pay. The implication of this legislation on the financing of public recreation is not yet clear. However, unless conditions change, public agencies at the state and local level will be under a greater strain in the future to provide recreation services.

2. **Operational support for recreation programs among local government is declining.** The 1974 recreation plan predicted increased difficulty in funding recreation services and operations. This prediction has materialized. Several local government fiscal problems have arisen and still exist. The pattern of increased reliance on nonlocal sources of funding first noticed in capital outlay has spread to operations. The difficulty is that local governments attempt to use various federal support programs only to find these are not reliable. This strategy is a short-term solution at best. Between 1972 and 1976, per capita operational expenditures declined in the local recreation system despite extensive use of federal manpower programs. Continued inflation will aggravate the financial support problem for recreation.
3. **Reliance on user fees and charges has been increasing.** Increased reliance has been placed on "fees and charges" to finance operations, much of it caused by the pressing need for operational revenue. Although some direct charging is appropriate for certain services, especially of the concession variety, a move to extensive reliance on fees as a substitute for general fund revenue and tax support conflicts with the basic purpose of public recreation, which is to serve those who cannot afford to participate without government support.
4. **State financing for recreational development and acquisition on the local level is insufficient.** Without a grant program for acquisition and particularly for development, it is difficult for the DNR to provide balanced support. Land acquisition and development activity has decreased since exhaustion of the state recreation bond program. In surveying local governments on issues in Region 1, reliability of revenue sources and state grant assistance for capital outlay emerged as important. Although more federal Land and Water Conservation Funds are available, total support falls short of previous levels under the bond program.
5. **The DNR faces severe deficits in revenue generated through the state Game and Fish Protection Fund.** This source is largely hunting and fishing license fees plus oil and gas royalties resulting from mineral leases on lands purchased with sportsmen funds. Despite some changes in license fees, the fund is not keeping pace with rising program costs and inflation. Attempts have been made to secure revenue from additional license requirements, such as for wild turkey hunting, and a state waterfowl stamp. A public access stamp, whose revenues are used to lease hunting lands in Southern Michigan, has also been added. Financial support has become a source of disagreement between sportsmen organizations and the DNR. This situation is aggravated by the fact that sportsmen support fish and game management, while substantial benefits go to other public user groups.

Studies show, for example, that Southern Michigan state game areas paid for by sportsmen are used more by nonhunters than hunters. At the present time there is no overall system for securing direct financial support from the “general recreationist.”

6. **Municipal recreation programs are often high cost programs.** Evaluation of municipal recreation programs shows them more costly than those of townships and counties. This higher cost contributes to the operation cost/revenue issue. Reliable cost data on the various recreation programs, which would allow definitive evaluation of program efficiency, is not available. Higher costs of municipal programs are partially due to program types offered. Because municipal programs employ more personnel than other programs, they must budget more for wages and benefits. However, it should be noted that municipal programs often serve residents of outlying jurisdictions.

Policy Recommendation

Public recreation agencies should secure reliable sources of revenue for recreation and emphasize cost-effective programs. Rising recreation program costs, resulting from inflation and other factors, indicate a need to be more cost-effective with programs and facilities. In addition, securing reliable sources of revenue to provide fiscal stability and increase efficiency has become increasingly important.

If strong actions place recreation largely on a user pay basis, and this emphasis prevails, it could jeopardize meeting a major objective of public recreation. In some cases it has been necessary and desirable to charge a fee to initiate a well intended program with high overall public benefit.

Management Actions

1. **Public recreation agencies must be increasingly aware of the total costs and direct user costs of their programs and should use such information more effectively in establishing program priorities.**
2. **Recreation agencies should develop programs—for both active and passive activities—which involve minimal personnel and upkeep expenditures, and which provide maximum freedom of choice to would-be recreationists.**
3. **The DNR should require, in Department and local applications for Land and Water Conservation Funds, more consideration of a project’s short and long term costs, its effects on the overall budget, and its impact on target populations.**
4. **Recreation agencies should support state legislation that would provide funds for conservation, recreation and environmental education.**

5. **Local governments should seek greater recreation program support from their general funds and increase revenue from special millages.**
6. **Public agencies should encourage private entrepreneurs to provide recreation opportunities and should assist to help private interests enter into appropriate ventures.**

D. Recreation Planning and Research

Issues

1. **The amount and quality of recreation research is inadequate.** Seldom can the impact of recreation programs on the community be quantified. It is the exception when precisely who and how many people are being served, and whether a program is truly fulfilling its objective is known. A better measurement system is also needed to determine how resource allocation and government policies respond to social problems. Financing and staff for studies needed to produce more insight into these complex problems is often insufficient at the state and local level.
2. **Effective recreation planning requires a better method of determining recreation needs.** While it is important to determine what recreation activities people engage in, it is also important to understand why, and what activities they would most like to engage in if opportunities were available. Far too little emphasis is placed on defining the complex issue of recreation needs. This plan has made some progress in that direction, but more needs to be done at local, state and federal levels.
3. **Coordination is inadequate among agencies responsible for providing recreation opportunities.** Competing and overlapping programs exist among cities, townships, counties, public schools and for some services in the private sector. While it is difficult to precisely identify duplication of effort and impact on program effectiveness, conditions point to the need for better program coordination, especially in the area of summer program services. Such coordination is needed most at the municipal level, where most of the recreation programs exist.

At the state level, responsibility for recreation and programs involving recreation is divided among several divisions and bureaus. An improved coordination process is needed whereby intra-division program impacts and objectives are considered in each division program to help assure that all divisions pursue department-wide objectives. Under current circumstances it is difficult to coordinate programs with other federal and state agencies much beyond review of

agency documents. This situation is similar at the local level, with many concerns raised by the state when local funding approval is sought. The problem is compounded by the many local entities involved.

Policy Recommendation

All public agencies should provide increased support for recreation planning and research. A more systematic process of goal and objective development is needed to achieve better coordination among local, state and federal government recreation programs. Goal and objective development needs to be supported by a strong executive level review process, in which decisions are evaluated against goal and objective accomplishment. This process in turn is heavily dependent upon increased knowledge of project and program impact.

Management Actions

1. **The Heritage Conservation and Recreation Service should provide additional research and financial support and technical assistance to the DNR and local governments for recreation research and planning.**
2. **The DNR will better coordinate its programs, especially those relating to recreation, to make sure they collectively contribute to the achievement of department goals. Development of specific goals and objectives regarding the department's recreation responsibilities will require a common information base and systematic use of that information by divisions with recreation programs.**
3. **The state should secure funds to demonstrate and test new and innovative approaches to state and local recreational planning, coordination and service delivery. Local units, the DNR, and private service organizations should be eligible to participate in receiving these funds.**
4. **The State will, and local agencies should, conduct surveys to determine public needs and attitudes.**
5. **The State will and local agencies should expand efforts to increase general public and special interest group involvement in recreation plan development through meetings and exchange of information.**
6. **Local agencies should define responsibilities better and work cooperatively with public schools and private services agencies to enhance recreation opportunity, which will reduce program costs and duplication. Planning requirements of the Land and Water Conservation Fund local grants program should be strengthened and broadened to promote better coordination among providers at the metropolitan and regional level.**

7. **Public agencies should address conflicts among recreationists engaged in different activities and should plan to lessen the threat of damage to the natural resource base.**

E. Coordination With Recreation-Related Functions

Issues

1. **The economic impact of recreation and tourism needs better definition.** Management of tourism suffers through difficulty of definition. Are a salesman's business-related expenditures tourism expenditures? Too much promotion can lead to overcrowding, thus creating an adverse impact on the resources that attracted tourists in the first place. Income transfer between regions resulting from tourism and recreation can have desirable effects on local economies, while providing low-cost high-benefit recreation. Transportation plays a key role in managing resources for recreation and tourism.
2. **Conditions within Michigan's older cities continue to be a major concern.** Major physical obsolescence problems still exist in cities. This problem is aggravated by a lack of aesthetically pleasing parks and open spaces to improve the living environment. At the same time, older central city property values are declining and tax bases eroding. This contributes greatly to current revenue problems in cities and to their lack of ability to finance recreation operations to improve conditions. Recent attempts have been made to revitalize larger cities, through a combination of commercial and park-like improvements aimed at making urban environments more attractive to recreationists and more competitive with suburban environments. Riverfront developments have had a major role in this trend. Federal and state governments must recognize the importance of improving the natural environment of our urban areas.
3. **Rising energy prices and concern for energy conservation may reduce public ability and desire to travel any distance to recreate.** The prospect of rising fuel costs, shortages and possibly even rationing cannot be discounted. Effects of energy shortages are often hardest upon lower income groups. Consideration of these factors must become an important part of recreation site and facility planning.
4. **Public recreation agencies have not taken sufficient advantage of new recreation potentials resulting from improvements in air and water quality.** Major improvements have made many urban areas more attractive, increasing the possibility of pro-

viding more satisfying recreation experiences. Water quality improvements have made possible new and improved water-related recreation opportunities. Many agencies have begun to take advantage of these potentials, but more can be done.

Policy Recommendation

Public recreation agencies should seek better coordination between recreation and related functions. For example, DNR recreation project decisions should coordinate better with improvements in water quality. Public information efforts to change public perception of resource quality as the quality itself changes is essential. This applies, for example, to the canoe overuse problems on certain Northern Michigan rivers. Improved public perception of southern water resources would ease such northern use pressures. Wetlands protection, tourism, urban redevelopment, energy conservation and wildlife management are other examples of functions requiring improved coordination with recreation programs.

Management Actions

1. **Public agencies should capitalize on improvements in air and water quality that provide new potentials for recreation development.**
2. **Local agencies should promote better coordination of recreation facility and program development within overall community development and special programs.**
3. **Local agencies should work closer to integrate recreation within overall land use development.**
4. **State recreation and tourism programs should identify reasons why people leave Michigan to recreate and examine the feasibility of reducing this flow of recreation dollars out of the state. Also greater effort needs to be placed on defining tourism and its relationship to recreation programs and resources.**
5. **Public agencies can save energy and fight inflation by promoting more efficient use of existing facilities and supporting a general closer-to-home development policy.**
6. **Where practical and desirable, local governments should consider providing recreation opportunity through open space in their sanitary landfill planning. The DNR, which licenses sanitary landfills, encourages this type of use.**
7. **Local governments should consider providing recreation opportunities on wastewater treatment plant sites, sewage interceptor rights of way and other related properties and facilities. The DNR funding program for construction of water management facilities presents opportunities to de-**

velop recreation uses at little or no additional cost. The DNR will continue to encourage this through grants administration and facility design review.

F. Recreation Resource Protection

Issues

1. **Rapid development of available open space is reducing available sites with recreation potential, particularly in high population growth areas in Southeastern Michigan.** Valuable agricultural lands, open space and wetlands are being lost to competing uses resulting in the destruction of valuable plant and animal habitat.
2. **In some instances recreation activity results in physical damage to the natural resource.** The physical resource is a complex and fragile system that cannot indefinitely absorb heavy use. Seemingly harmless activities can result in serious damage. Study should be continued to determine the degree to which different activities contribute to resource damage and the relative costs involved in preventing or repairing the damage.
3. **Criticism has been directed toward hunters regarding the harvest of surplus game.** Although hunting has been recognized as an important part of scientific game management for years, a segment of the public continues to level criticism. This criticism threatens to undermine highly successful programs, which have contributed greatly to increasing wildlife populations and providing necessary habitat, and important recreational pursuits.
4. **Many forms of recreation conflict with other recreation uses of the resource.** Recreation resources, particularly in Michigan's highly populated areas, are the scene of increasing user conflicts. Furthermore, heightened recreation activity on public waters and lands will increase congestion and the possibility of conflict. Conflicts between fishermen and canoeists on several important recreational rivers of the state is already a problem. Although different recreation activities can take place on the same site at the same time without conflict, this is not always the case.
5. **Air and water pollution control efforts have made tremendous progress in Michigan over the past 10 years.** However, problems still exist which require continued effort. Air pollution exists to a considerable degree in some cities and rural areas as well, and more water quality improvements also must be made.
6. **The Department's programs must remain flexible enough to allow consideration of special situations that are in the recreational interest of the**

public. Some of Michigan's important recreation resources, such as wildlife and aquatic habitats, are threatened by private acquisition and development. In other cases, lands that would be valuable as public recreation areas become available for purchase. In either case, the Department must be flexible enough to allow purchase of these lands should the opportunity arise. However, projects resulting from such opportunities should be carefully considered in the light of overall Department objectives.

Policy Recommendation

All development actions taken by public and private sectors must consider the possible impacts on the natural resource base. Attitude improvements should be based on the concept of all natural resources not so much as commodities but as a community to which everyone belongs.

Management Actions

1. **Public agencies and private interest groups should continue to place high priority on securing effective state land use legislation.**
2. **Public agencies should provide protective measures for sites and objects having aesthetic, historic, geologic, archaeologic or other scientific values.**
3. **State and Federal government should, in cooperation with the private sector, conservation and environmental interests, and local governments, expand its information and education efforts to explain the benefits of wise recreation resource management.**
4. **The Department of Natural Resources will obtain valuable AuSable-Manistee properties offered by Consumer's Power Company.**



state and federal recreation programs

2



Department of Natural Resources Division Programs

This section discusses major DNR recreation-related programs. Management goals, short-range management emphasis and five-year (1979-84) budgets for each division having recreation responsibility are stated. The 1979-84 projected capital outlay and operations budgets are as follows:

<u>Divisions</u>	<u>Development</u>	<u>Land Acquisition</u>	<u>Operation</u>
Fisheries	\$21,504,000	\$ 500,000	\$ 40,569,000
Forest			
Management	3,170,000	1,400,000	12,000,000
Parks	34,186,000	9,796,000	77,150,000
Waterways	23,733,081	1,380,000	24,498,566
Wildlife	3,476,000	15,353,400	54,467,000
Totals	\$86,069,081	\$28,429,400	\$208,684,566

For budgetary information on DNR recreation land acquisition and development programs for fiscal year 1979-80 by funding source and regions reference Tables 1 and 2, Appendix B.



Management Goal

To protect and maintain through efficient management optimal populations of all wild birds and animals for the numerous recreation, ecologic and economic benefits they afford people. To promote and guide the wise use of wildlife resources through public information and education programs. To advance the science of wildlife resource management by effective coordination and execution of research programs. To protect and enhance the land and water resources on which all wildlife depend.

Management Emphasis

Providing additional hunting recreation will require expansion of three important wildlife programs: deer, small game and waterfowl. Other hunting and trapping programs will provide some additional recreation, but of these only wild turkey hunting has potential for providing substantial additional recreation.

There are several barriers to providing additional hunting recreation. Lack of public acceptance of the DNR deer herd management program continues to be a problem. Carrying capacity of the northern deer range is declining, mainly because the forest is growing older. Valuable habitat is being lost due to conversion to other land use, which has reduced wildlife populations. Posting of private lands against public use is another problem. Private land provides some of the most productive and huntable lands. Much of it has been closed to public entry, causing increased recreation pressure on public lands. Finally, financial resources needed to support a larger and more comprehensive management program do not exist.

Wildlife Division programs affect wildlife populations which in turn affect recreation and impact on both public and private lands. The management program responds to the need for more recreational opportunities where they are now lacking. However, location of the resource and potential for management is a key consideration in project development because of the need to match land availability and desirable habitat. Some regions simply do not possess good management possibilities. The program also addresses the need for protection of endangered habitats. Nonhunting recreation is allowed to continue on lands under the division's jurisdiction when it does not conflict with the primary wildlife management goals, and such use will be encouraged through information efforts. Table 1 indicates Wildlife Division's land acquisition by program and allocations of development funds by region for the next five years.

**MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WILDLIFE DIVISION LAND ACQUISITION BY PROGRAM
AND DEVELOPMENT BUDGET BY REGION, 1979-84**

<u>Program</u>	<u>Acres</u>	<u>Cost</u>
Forest Wildlife	16,000	\$ 4,800,000
Wetland Wildlife	12,500	5,625,000
Farm-Urban Wildlife	11,100	4,928,400
	39,600	\$15,353,400

<u>Region</u>	<u>Development</u>	<u>Acquisition</u>
1	\$1,610,000	\$ 1,186,620
2	—	163,800
3	—	213,474
4	—	152,112
5	220,000	198,024
6	130,000	54,900
7A	—	1,140,600
B	165,000	2,020,410
C	330,000	909,000
8A	40,000	1,155,570
B	—	87,000
9	50,000	2,010,900
10	220,000	522,000
11	425,000	1,814,400
12	40,000	1,258,200
13	46,000	470,550
14	200,000	1,995,840
	\$3,476,000	\$15,353,400

TABLE 1



forest management division

Management Goal

Michigan's state forests are multiple-use areas. They provide timber, wildlife habitat and other values in addition to recreation. Forest management balances recreation with these other key values. Its overall goal is to "plan, promote and achieve patterns of forest use that optimize economic, environment, recreation and social values according to the needs of Michigan citizens now and in the future." Within this framework, the forest recreation program attempts to maximize recreation use of the state forests, yet protect the forest.

Management Emphasis

Major elements of the forest recreation development and construction program are campgrounds, hiking trails, snowmobile and off-road vehicle trails and areas and forest roads. The land acquisition program also includes railroad right-of-ways and "ownership consolidation" parcels.

All state forest lands are located in Michigan's Upper and Northern Lower Peninsulas. Although forest acreage is about equal in the two peninsulas, the division expects to spend about twice as much for forest recreation in the Lower Peninsula because of greater recreational needs in Southern Michigan.

Several important constraints are addressed by the forest management program. Portions of state forests are underused because of lack of access, and increasing access to them will take pressure off overused areas. The amount of state forest frontage on quality lakes and

streams is limited and should be expended by acquisition of key parcels of land. Other parcels are needed to provide missing links in trail corridors.

Separation of conflicting uses on forest lands is vitally important. Conflict between motorized and nonmotorized recreationists is the most visible. Establishing designated trails and areas for specific uses helps solve this problem, and this approach will be expanded. The DNR's recently completed ORV Plan and trails planning efforts will help address these issues. Increased posting and fencing of private lands has also caused additional public recreation demands on state forests. Statewide programs are needed to reverse this trend through landowner incentives. In addition, the increasing populations of some northern communities place more pressures on public forest lands. Fee collection will begin at certain forest campgrounds in 1979, and this program will be monitored for revenue production and improvements in services to campers. Other types of user fees may be necessary in the future.

Through its Urban and Community Forestry Program, the division helps local governments develop comprehensive tree management programs and plans. This program relates to recreation indirectly by helping make urban areas more attractive, thus helping develop recreation areas near cities. The Urban and Community Forestry Program is expected to undergo modest expansion in the near future. Forest recreation funds for development and land acquisition for the next five years are summarized in Table 2.

**MICHIGAN DEPARTMENT OF NATURAL RESOURCES
FOREST RECREATION DEVELOPMENT PROGRAMS
AND LAND ACQUISITION BUDGET BY REGION, 1979-84**

<u>Program</u>	<u>Amount</u>	<u>Cost</u>
Campsites	975 sites	\$1,950,000
Pathways (foot trails)	440 miles	220,000
Snowmobile Trails	820 miles	410,000
ORV Trails	1,160 miles	290,000
Forest Roads	60 miles	300,000
		<u>\$3,170,000</u>
<u>Acquisition</u>		
Railroad		
Right-of-Way	480 miles	\$ 600,000
Other Land	1,900 acres	800,000
		<u>\$1,400,000</u>
<u>Region</u>	<u>Development</u>	<u>Acquisition</u>
7A	\$ 70,000	\$ 50,000
7C	420,000	150,000
8B	460,000	150,000
9	570,000	250,000
10	550,000	300,000
11	325,000	200,000
12	425,000	150,000
13	350,000	150,000
	<u>\$3,170,000</u>	<u>\$1,400,000</u>

TABLE 2



commercial fishing activity threatens Great Lakes fish populations. Without closer regulations, fish populations could be wiped out.

**MICHIGAN DEPARTMENT OF NATURAL RESOURCES
FISHERIES DIVISION DEVELOPMENT PROGRAMS AND
LAND ACQUISITION BUDGET BY REGION, 1979-84**

<u>Program</u>	<u>Cost</u>	<u>Region</u>
Urban Fishing Program	\$10,220,000	1A, 1B, 1C, 2, 3, 5, 6, 7A, 8A
Fish Passages	2,585,500	4, 6, 8A
Sea Lamprey Barriers	4,389,000	Statewide
Fish Hatcheries	3,430,000	4, 12
Great Lakes Facilities	880,000	7B, 7C, 12
Subtotal	\$21,504,500	
Land Acquisition	\$ 500,000	Statewide
Total	\$22,004,500	

TABLE 3

Management Goal

The Fisheries Division is responsible for the protection and enhancement of populations and habitat of fish, reptiles, amphibians and other forms of aquatic life, and for promoting optimal use of these resources for public benefit.

Management Emphasis

This division recognizes the potential recreation opportunities that exist in Michigan's urban metropolitan regions. Water resources associated with most urban areas provide an excellent base from which to increase sport fishing recreation. Thus, the Urban Fishing Program will continue to receive emphasis. Fishing piers, bulkheads, fishout ponds, fish ladders, viewing platforms and a new warmwater fish hatchery are scheduled for construction under this new urban program.

At the same time, the division will continue its work in protecting and enhancing aquatic resources throughout Michigan with such projects as fish passages, Great Lakes facilities, fish plantings, lamprey barriers and key land acquisitions. The division will be confronted by several serious problems in the near future, however. First is the shortage of operating revenue from the State Game and Fish Fund. Unless additional revenue is made available, many recreation programs may have to be cut back or eliminated. A second problem regards commercial fishing and actually is two problems. If allowed to continue, the use of gill nets to harvest fish is a definite threat to the state's fishery. Similarly, the inability to regulate Indian



Management Goal

The goal of the State Park and Recreation Area Program of the Parks Division is to acquire, maintain and make available to the public open spaces for recreation, and to preserve natural beauty or features of historic significance. This program also regulates use of these lands to preserve their scenic, natural, historic and wildlife features, and to provide for public enjoyment both now and in the future.

Management Emphasis

Improved transportation systems have increased the accessibility of Michigan's state parks and recreation areas. Large open spaces, forests and access to lakes and rivers provide visitors with opportunities to camp, fish, swim, hunt and hike. Interpretive facilities, museum and visitor centers augment visitor appreciation and understanding of the natural environment in Michigan.

Rising transportation costs, increasing population and limited recreation resources in Southern Michigan will contribute to an already serious problem of overcrowded parks, overburdened resources and destruction of natural features people seek to enjoy and parks attempt to preserve. More parks and recreation areas are needed closer to population centers in Southern Michigan.

At the same time, private development continues along the Great Lakes shorelines, inland lakes, streams and forests. Action must be taken to acquire and preserve such areas to assure adequate recreation opportunities for the future.

The state park program seeks, through development and land acquisition, to provide recreation opportunities and preserve significant natural features throughout Michigan. The proposed Capital Outlay Program emphasizes new and existing park development and land acquisition in Southern Michigan, along with significant attention to the preservation of valuable resources in the northern regions. Almost \$38 million, or two-thirds of the total budgeted for development and land acquisition, will be spent in Southern Lower Michigan. The remainder will be spent in Northern Michigan Regions 7C, 8B, 9, 10, 11, 12 and 13 (Table 4).

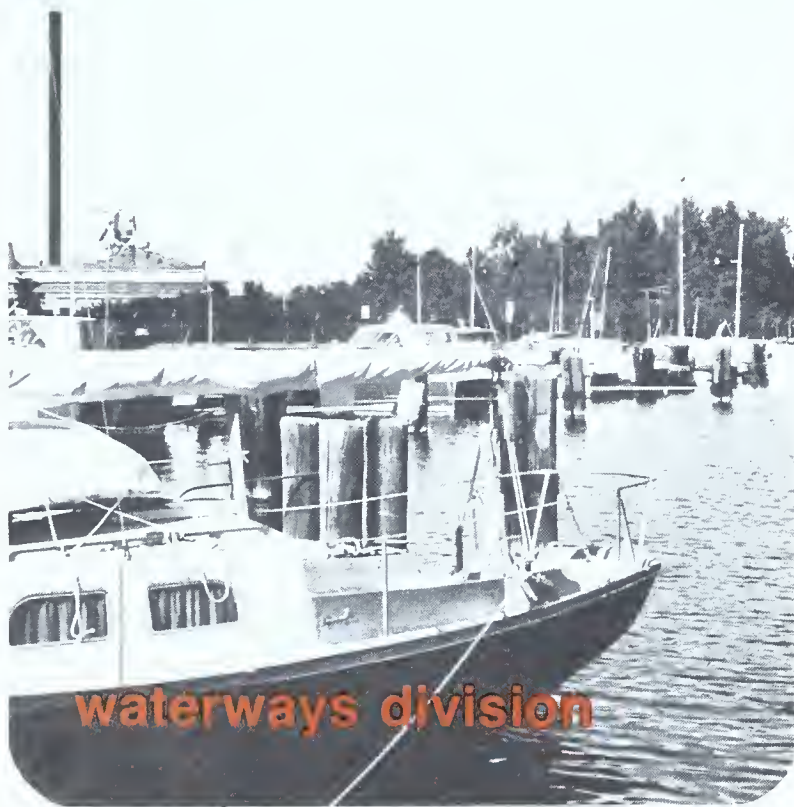
MICHIGAN DEPARTMENT OF NATURAL RESOURCES PARKS DIVISION DEVELOPMENT AND LAND ACQUISITION BUDGET BY REGION, 1979-84

Region	Development	Land Acquisition
1A	\$ 1,570,000	\$ 0
B	10,701,000	6,317,900
C	4,463,000	2,360,600
2	300,000	0
3	534,000	0
4	600,000	770,000
5	950,000	744,650
6	995,000	0
7A	430,000	0
B	1,310,000	0
C	680,000	5,500
8A	1,145,000	0
B	210,000	550,000
9	3,975,000	239,800
10	2,466,500	165,000
11	2,450,000	0
12	1,650,000	330,000
13	2,280,000	2,150,000
14	3,080,000	1,544,500
Statewide	3,000,000	—
Total	\$42,789,500	\$15,371,000

TABLE 4

Day use facilities such as swimming beaches, trails and picnic sites will account for roughly 47 percent of development expenditures. Camping facilities, by comparison, will make up only 18 percent. The remainder is budgeted for site improvements and construction of support facilities.

Operating costs over the next five years are projected to exceed \$77 million. Alternative methods of funding park operations are under study. The greatest problem facing Parks Division will be dealing with increased park use on a limited operations budget.



Management Goal

The goal of the Waterways Division is to provide reasonable, adequate and safe access to the waters of the state for recreational boating and related forms of recreation; to enhance participation in and improve quality of recreational boating for all types of craft; and to associate boating facilities with other recreation facilities seeking mutually supportive results.

Management Emphasis

The Waterways Program has two main programs: public launching access sites and Great Lakes harbors and marinas. The access site program is categorized by type of water body—Great Lakes, inland lake or stream/river—to which access is provided. The access site program exists because the public has the legal right, for purposes including navigation, to use surface waters of the state's inland lakes and navigable rivers and streams. Proper exercise of that right, however, calls for gaining access without trespassing upon the lands of riparian owners.

This right of surface water use is part of the public trust, and providing legal access is accomplished through the public access site program. However, in administering this program, the state recognizes the necessity of relating boating use to the other water uses to protect the quality of the recreation experience of each user. To do this, the Waterways Division has authorized new access sites only on lakes with surface areas of 160 acres or more. The division also has adopted criteria that relate the

size of access sites to lake sizes and maintains a priority list of lakes to be provided with public access.

There are no definitive standards for spacing of access sites along streams. An overall program goal of one site for every 30 miles of stream has been adopted, to establish program dimensions for long-range capital outlay estimates. Ideally, access sites should be closer together. A canoeing access plan for the Grand River system, for example, calls for one site in every six miles. This may be an inappropriate standard, however, for a river which flows faster or wilder. Thus, spacing decisions must be made on a case-by-case basis.

The harbors and marinas program is divided into harbors-of-refuge and dock construction. The harbors-of-refuge program is designed to provide these facilities at 30 mile intervals along Great Lakes shoreline where there are no existing harbors or natural shelters to facilitate safe cruising by all recreational boats. The program calls for 15-mile interval harbors near metropolitan areas to facilitate cruising by smaller recreational watercraft.

The dock construction program is designed to provide transient and seasonal docking facilities for Michigan's recreational boat owners. Transient docks are required in all refuge harbors by federal legislation and are provided elsewhere to facilitate cruises. Transient dock demand has largely been met. However, an ever-increasing demand for seasonal dockage facilities has long occupied the attention of the Waterways Division and is the largest program concern at the present time.

Waterways and State Parks Divisions, in particular, provide recreation opportunities that may also be provided by the private sector. Commercial marinas are a case in point. In the case of Waterways, however, such opportunities are provided only when a clear demonstration has been made that private enterprise has been unable to meet the demand for seasonal boat wells. Even in those instances, the Waterways Division has adopted restraints designed not only to assure that no competition with private enterprise exists but also to facilitate and enhance marina construction by private enterprise. From all indications to this point, the unmet demand for seasonal docking facilities is far greater than the resource capability of the public and private sectors combined.

Capital outlay for Waterways Division's five-year program will total approximately \$25 million (Table 5). Just over \$16 million of this will go for construction and other development in the harbors and marinas program. Capital outlay in Southern Michigan will be just over \$7.6 million. Launching access program capital outlay will be about \$4.8 million on Waterways operated projects, with \$2.1 million of this to be spent in the Southern Lower Peninsula. The proposed program will also make available over \$2 million statewide in grants to local units of government, for use in development of launching access sites that they

will operate. Statewide expenditure for land acquisition is projected at just under \$1.4 million. Most of this acquisition will be for launching facilities. Despite this expenditure schedule, the division presently maintains a backlog of approved projects totaling more than \$60 million, with little expectation of reducing this total in the near future.

There are three major constraints under which the Waterways Division must operate. The most important is limited financial resources. The main sources of funds are marine fuel taxes and watercraft registration fees. The principle problem is that inflation is increasing operating costs at a rate far greater than the increase in revenues. As a result, current predictions are that, by 1985, rising operating costs will leave little revenue for capital outlay.

The second major constraint facing the division is the inherent conflict between the public's right to use the surface waters of the state and the claims, particularly by riparians, that public access results in adverse effects on the water resource and quality of the recreation experience. Waterways Division land acquisition policy allows for the purchase of land that is for sale on the "open" market. If program specifications indicate access should be provided to a given body of water, the lack of someone willing to sell the land can prohibit access from being provided. The lack of a seller is an especially important consideration in regions with limited water resources. Many riparian owners and other local residents often do not want additional public use of lakes. This attitude and the need for a willing seller make it difficult to obtain

property to provide for public use on inland waters, particularly in heavily populated areas of the state.

Another major constraint of the public access site programs is the location of few inland lakes near population concentrations. The program must work toward meeting recreation demands with a fixed resource base, since creation of new bodies of water in significant numbers and sizes is not feasible. Unfortunately, most of the state's population is located in the southern third of the state while many inland lakes lie in the northern two-thirds.

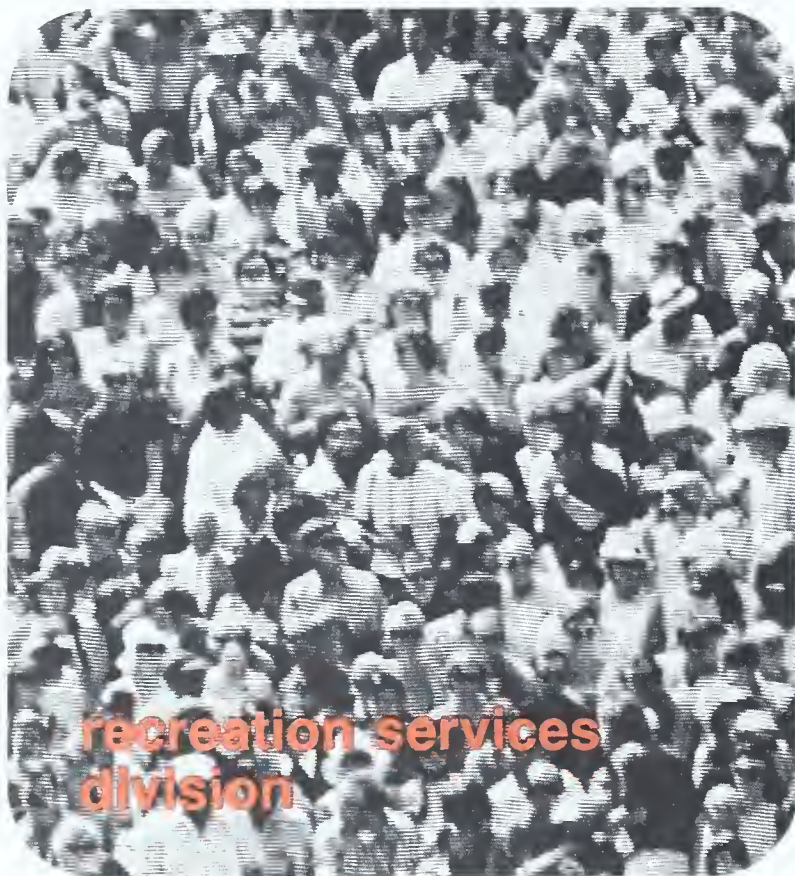
Waterways Division attempts to compensate for this problem in three ways. First, the division has allocated more dollars to its land acquisition program in the southern counties, hoping to provide more inland lake recreation opportunities. Second, population density is carefully considered in determining inland lake desirability for acquisition of new access sites. Third, the division has attempted to develop Great Lakes launching facilities wherever possible, thus providing alternative opportunities.

The southern inland lakes near population centers have the highest degree of development, the highest property values and the most intense opposition to public access, all which make increasing accessibility to significant levels difficult. Providing Great Lakes facilities mitigates the problem to some degree, but these resources cannot provide the same degree of opportunity for small craft as inland lakes. Waterways Division also plays an important role in helping to accomplish fisheries or wildlife management objectives.

**MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WATERWAYS DIVISION DEVELOPMENT AND LAND
ACQUISITION BUDGET BY PROGRAM AND REGION, 1979-84**

DNR Administrative Region	Program Element				
	Harbor Development	Launching Sites Development	Local Grants (statewide)	Both Programs Acquisition (statewide)	Repairs (statewide)
Upper Peninsula	\$3,383,170	\$1,157,370	—	—	—
Northern Lower Peninsula	5,134,183	1,485,982	—	—	—
Southern Lower Peninsula	7,653,313	2,159,174	—	—	—
Total	\$16,170,666	\$4,802,526	\$2,047,950	\$1,380,000	\$711,939

TABLE 5



Management Goal

To provide technical assistance and guidance to all state, local and other recreation serving agencies and interests in the planning, design and development of recreation areas, programs and facilities; to prepare and keep up-to-date a state recreation plan; and to coordinate all trail activities.

Management Emphasis

The Michigan Recreation Plan evaluates resources, population projections, travel patterns, and changing social and economic influences in light of findings from the public participation process. Beyond this, the Plan charts possible courses of action to meet today's recreation needs and projects how these needs will change in the future.

The division offers special information and projections to recreation agencies in the form of concise topical reports. Surveys, studies and inventories are stored in a resource data file. This information is available to other Department and local recreation planning agencies. The division staff provides special studies and guidance for the planning efforts of other recreation-related divisions of the Department.

The overview gained from preparing an Action Plan guide for future federal, state, county, city, township and private resources and facilities is an asset to other division services. Division professionals advising local communities regarding community activities such as sports programs, social recreation, cultural projects and special programs

and facilities for the handicapped and aged, use the Plan as a guide.

A main area of service is consultation for the local recreation facility development, design and operations. Proposals for the design of recreation buildings and structures, parks and recreation areas and consideration for handicapped use are developed to assist local communities. In keeping local recreation interests informed, the division prepares and offers guidelines and handbooks on the design and operation of trails, golf courses, camping, nature centers, amphitheaters, pools, beaches and other recreation facilities. Each year, the division publishes manuals on recreation facility costs, recreation consultants and new concepts in recreation facilities. In addition, assistance is provided to local governments on the creation of local parks and recreation commissions and recreation activity programming for improved facility usage.

Trails are a special area of services tied to both technical assistance and to state and local recreation planning. All state and local recreation trail activities focus and revolve around the state trails coordinator. The Citizens Trails Council's activities and state trails planning, as well as special grants for trail development and maintenance are directed by the state trails coordinator. The division also conducts trail user surveys and is the Department's ear for public participation in the direction of our own recreation trail development program.

The division's broad duties provide a voice within the Department for many recreation interests. Division specialists provide technical assistance to the Department for improving basic management programs, and to ensure that the recreation needs of our citizens are considered. This role as promoter of ideas is best typified by the Department's urban recreation program, which encourages increased emphasis on "closer-to-home" recreation.



Urban Recreation Policy and Programs

The Department of Natural Resources recognizes a responsibility to provide recreation. Federal and State actions reveal a growing concern with lack of adequate urban recreation opportunities. We plan to be ready—to respond to and lead programs resulting from this concern. The Department's Urban Recreation Program affirms our leadership role and the chance to positively affect the quality of life in Michigan. We have developed our urban recreation policy, programs, and objectives fully realizing that the Department of Natural Resources cannot directly be the prime provider of urban recreation.

The Department defines very explicitly its role in addressing urban recreation concerns. We will stress what the Department does well, that few others do better, and outline how the Department can provide additional urban recreation opportunities. The Department's Urban Recreation Program will focus on providing recreation opportunities in the areas surrounding our major cities. These resource areas are defined as within one-half hour's driving time from the center of the major cities in the Detroit, Grand Rapids, Flint, Lansing, Ann Arbor, Kalamazoo, Saginaw, Muskegon, Jackson, Bay City, and Battle Creek Standard Metropolitan Statistical Areas (SMSA's), as shown in Figure 2, page 31.

Our urban recreation objectives are outlined generally for the Department, and specifically for each of these major recreation related programs:

- Parks
- Fisheries
- Wildlife
- Waterways
- Trails
- Financial Assistance
- Technical Assistance
- State Exposition and Fairgrounds

The Department's Urban Recreation Policy

Many deficiencies in urban recreation opportunities are described in the **1979 Michigan Recreation Plan**. The Department of Natural Resources, with recreation responsibilities, must take positive actions to address these deficiencies. These actions will place a high emphasis on the existing types of recreation opportunities we provide, and develop new programs (e.g. education) for urban residents to be more knowledgeable and thus better able to utilize these opportunities. As our urban recreation policy:

The Department of Natural Resources will place a top priority on expanding existing and developing new recreation facilities and programs in the areas surrounding the major cities in Michigan.

Department Urban Recreation Role

General:

Provide resource based outdoor recreation through those natural resource programs feasible in urban areas.

Provide financial assistance to local governments to assist them in carrying out their responsibilities in recreation.

Provide technical assistance to local governments, private concerns, citizen groups, and individuals for providing recreation in urban areas.

Provide an information service to urban residents about the Department's programs and facilities.

Provide education programs for non-users on how to appreciate and utilize recreation resources.

Specific:

Provide urban recreation opportunities **directly** through six major Department programs: Parks, Fisheries, Wildlife, Waterways, Trails, and State Exposition and Fairgrounds.

Assist other agencies and groups in providing urban recreation through two Department programs related to urban recreation, regardless of provider: Financial Assistance, and Technical Assistance Programs.

Department Urban Recreation Goal

To fulfill the Department's defined role in urban recreation and to attain the objectives in each recreation program area.

Components to Attain Goal

Land Acquisition

Facility and Site Development

Operation and Maintenance

Programs—Existing and New

Education

Information

Financial Assistance

Technical Assistance

Department Program Objectives

Make low cost recreation available to urban residents.

Assure equity in State and Federal funding administered by the Department.

Provide satisfactory levels of operation and maintenance at recreation sites and facilities.

Provide education programs to enable urban residents to better understand and use recreation opportunities provided by the urban fisheries, wildlife, and parks programs.

Work with local transportation authorities to develop programs aimed at providing public access to recreation facilities in the urban areas.

Parks Urban Recreation Role

General:

Provide for traditional quality outdoor recreation at state parks and recreation areas in the urban areas that are accessible to all urban residents.

Specific:

Provide for a variety of day use activities in urban area parks to include: picnicking, swimming, trails, and nature interpretation.

Provide modern, rustic, and group camping facilities.

Parks Urban Recreation Goal

To develop and expand the system of state parks in the urban areas by providing traditional park recreation opportunities without compromising natural or historic settings.

Components to Attain Goal

Acquisition of new sites and inholdings.

Development of existing and new parks.

Upkeep-maintenance and operation of the system.

Programs—maintain and expand (nature interpretation, group camping, day camping, picnicking, swimming, trails, hunting, and fishing).

Parks Program Objectives

Accelerate development of the five parks in the Detroit urban area according to Commission approved park master plans.

Acquire inholdings in the Detroit urban area parks as they become available.

Provide information to urban residents on the programs and facilities available in urban area parks.

Expand day camp program in Detroit urban area parks.

Develop programs to teach camping skills and an appreciation for the "out-of-doors" for previous non-users.

Fisheries Urban Recreation Role

General:

Provide fishing opportunities for all urban residents by providing fishing facilities, manipulating fish populations, restoration of habitat and recommending regulations.

Provide leadership, coordination and instruction for the development of fishery programs.

Specific:

Management—to develop fish stocks important to urban sport fishing (surveys, fish stock rehabilitation, fish planting, fish passage, and control and regulation).

Leadership and Coordination—to provide access and suitable fishing facilities (program development and agency coordination).

Interpretation—to increase knowledge and use of sport fishing stocks (at facilities, with publications and media, and through fisheries services).

Instruction—to develop educational programs to teach fishing skills for all age levels.

Fisheries Urban Recreation Goal

To provide good fishing opportunities in the urban areas, inform urban residents of those opportunities, and increase urban per capita fishing participation rates 50 percent by 1990.

Components to Attain Goal

Planning to evaluate resource, project water quality improvements, determine management goals, and establish management priorities.

Management to establish balanced fishable stocks by developing anadromous and other stocks, and by either allowing or limiting fish passage.

Coordination to provide necessary State services and provide adequate State and local facilities through financial and technical services.

Leadership to provide necessary State services and stimulate local development programs.

Programming to interpret, educate, stimulate interest, and increase awareness.

Fisheries Program Objectives

Complete Detroit Metro fishing program by 1985.

Complete Grand River urban fishing program by 1985.

Develop plans and programs for the nine other urban areas by 1982.

Provide interpretive facilities at two additional urban sites by 1983.

Investigate the feasibility of developing a fishing instruction program that will teach fishing to school children and other groups, and that will provide instruction for instructors.

Conduct "how-to" fishing programs, in conjunction with local sportsman organizations, or other interested groups: in Lansing and Grand Rapids by 1981 and other urban areas by 1985.

Wildlife Urban Recreation Role

General:

Provide wildlife hunting and nonhunting opportunities for urban area residents in and near urban areas by species population manipulation and regulations.

Specific:

Management—to ensure adequate populations of game and nongame species (surveys, habitat improvement, and regulation of seasons and limits).

Leadership and Coordination—to provide access to wildlife opportunities.

Interpret wildlife resources and increase public knowledge of wildlife programs through facilities, publications and communications, and wildlife services.

Wildlife Urban Recreation Goal

To make available in the urban areas increased consumptive and nonconsumptive uses of nearby wildlife resources and facilities.

Components to Attain Goal

Acquisition of land.

Leasing of land.

Habitat management.

Public information.

Interpretation, education, and training.

Regulations.

Wildlife Program Objectives

Develop and initiate operational policies for nonhunting use of game areas by 1980.

Increase access for hunting under the Public Access Stamp Program with emphasis on leasing lands in the Detroit, Lansing, Flint, Ann Arbor, and Kalamazoo urban areas.

Develop trails in game areas to allow for controlling compatible nonhunting uses of these lands. Complete this for Rose Lake, Cannonsburg, Flat River, and Dansville game areas by 1981.

Develop shooting range facilities in the Lansing and Grand Rapids urban areas by 1982.

Continue acquisition and provide leadership for development projects in the St. Johns Marsh, to include fishing sites with bank or pier facilities and support services.

Provide information to urban residents on the wildlife opportunities available in urban areas.

Complete the waterfowl/wetlands interpretive center at Pointe Mouillee, and develop plans for interpretive centers at the St. Johns Marsh and another in Western Michigan.

Acquire inholdings within the urban game areas as they became available.

Waterways Urban Recreation Role

General:

Provide access to public waters in urban areas through facilities for mooring, launching, and related waterfront recreation. Assist other State or local agencies in providing access to public waters.

Specific:

Launching—provide public access sites on the Great Lakes, inland lakes, and streams in the eleven urban areas.

Mooring—provide harbors and docking facilities in urban areas on the Great Lakes.

Assist other agencies—provide financial and technical assistance to other agencies where it is appropriate for them to be major providers of water access.

Provide for complementary recreation that occurs at public access sites and marinas.

Waterways Urban Recreation Goal

To assure public access in the urban areas to public water including the Great Lakes and connecting waters, inland lakes, rivers, and streams.

Components to Attain Goal

Acquisition of water access property.

Development of launching and mooring facilities.

Develop recommended mixes of watercraft uses for waters and implement appropriate regulatory actions.

Assistance to other agencies that can provide any of the components.

Waterways Program Objectives

Provide water access in conjunction with other urban recreation programs that provide water-based recreation such as parks, fishing, waterfowl hunting, swimming, and similar activities.

Complete a plan for access site development on rivers in the eleven urban areas by 1982.

Provide boating access to all lakes in urban areas that are 160 acres or more in size by 1985.

Provide facilities at boating access sites in urban areas for appropriate nonboating water-based recreation.

Provide facilities and access for nonmotorized watercraft to help reduce use and conflicts on northern waters.

Trails Urban Recreation Role

General:

Provide trails on State lands in the urban areas, and assist local units to provide trails.

Specific:

Provide trail opportunities on State lands in the eleven urban areas.

Provide coordination among agencies within urban areas that provide trails.

Administer State funds available to local governments for trails.

Provide information for urban area residents about trail opportunities in urban areas.

Assist local governments and user groups in trail development and maintenance.

Trails Urban Recreation Goal

To provide a recreation trail system in each urban area, that is balanced among all trail activities, and compatible with the resource base.

Components to Attain Goal

Trail development on State lands.

State grants to local governments for trails.

Urban element in Statewide Trails Plan.

State (DNR) coordinating activities.

Publish public information and maps.

Safety training programs.

Use of abandoned railroad rights-of-way.

Lease trail easements.

Trail users volunteer efforts.

Trail vehicle registration programs.

Trails Program Objectives

Publish maps of all State trails in urban areas.

Administer local grants for trails program.

Complete trail systems in state parks and recreation areas in urban areas by 1982.

Publish recreational bicycle route maps for urban areas by 1980.

Develop a second ORV use area in the Detroit urban area by 1982.

Complete Statewide Trails Plan with urban element by 1980.

Financial Assistance Urban Recreation Role

General:

Provide financial assistance to local governments within the eleven urban areas, to assist them in carrying out their role in urban recreation.

Specific:

Administer State and Federal funds that provide grants to local governments for recreation.

Provide mechanism for joint-State and local sponsorship or urban recreation facilities and programs.

Financial Assistance Urban Recreation Goal

To attain and sustain the economic and physical stability of recreation facilities and programs within urban areas, and achieve equity for urban areas in the distribution of State and Federal funds for recreation.

Components to Attain Goal

Land and Water Conservation Fund.

Michigan Land Trust Fund.

New State funds (grants for trails).

New Federal funds (Urban Park and Recreation Recovery Act of 1979).

Special Grants.

Donations.

General Fund.

Financial Assistance Program Objectives

The Department will redetermine the use of LWCF and other funding sources for the major urban areas.

Institute a State funding program by 1981 for matching Federal funds for local recreation in urban areas.

Increase joint State-local sponsored urban recreation projects.

Technical Assistance Urban Recreation Role

General:

Provide technical assistance in three areas that deal with recreation in the urban areas: project review (development and acquisition), consultant services (facilities and programs), and recreation planning.

Specific:

Review project proposals for all State and Federal recreation programs affecting urban areas.

Provide consultant services to local governments and other recreation serving agencies.

Maintain the State Recreation Plan, which includes urban areas, recreation issues, program proposals, and suggested legislative actions.

Technical Assistance Urban Recreation Goal

To make assistance available to all communities within urban areas for recreation planning, facility design and program development, operation and maintenance schedules, and processing of grants.

Components to Attain Goal

Project review.

State Recreation Plan.

Technical manuals.

Training.

Design and program assistance.

Assistance for private funding sources and donations.

Recreation data files and reference materials.

Assistance in organizing, administering, and maintaining recreation systems.

Service to special populations.

Technical Assistance Program Objectives

Complete urban recreation program for inclusion in State Recreation Plan.

Increase local contacts 30 percent by 1981.

Assure equitable distribution of State and Federal grants to local units in urban areas through project review.

Jointly work with public transportation systems to develop programs to increase accessibility to outdoor recreation for central city residents.

Develop the mechanism to create co-sponsorship by State, Federal, and local governments for recreation programs and projects in all eleven urban areas.

Assist local units to develop practical long-range plans for the maintenance and operation of recreation facilities and programs. Require implementation and monitor such plans before providing additional financial assistance for new or expanded recreation opportunities.

State Exposition and Fairgrounds Urban Recreation Role

General:

Develop and operate a year-round recreational, educational, and cultural center.

Specific:

Provide for a variety of services and activities on the site to:

Coordinate and promote the Department's urban recreation effort in Southeast Lower Michigan.

Articulate and interpret environmental resource issues.

Offer a series of educational, promotional, and instructional natural resource programs.

Provide technical assistance and community services to local units of government within the region.

Develop a State Fair that will continue to act as a "showplace" for Michigan's agricultural community while also emphasizing educational, recreational, and cultural opportunities.

Act as the "nerve center" for Department recreation activities and provide needed services and facilities to Southeast Michigan.

State Exposition and Fairgrounds Urban Recreation Goal:

To develop an urban Natural Resources and Recreation Services Center at the Fairgrounds site, to include all of the various divisional recreation related activities and functions.

Components to Attain Goal

Provide office space and facilities.

Provide staff to operate programs.

Conduct a public awareness program to reach urban residents about existing programs, facilities, and natural resource issues.

State Exposition and Fairgrounds Program Objectives

Conduct and expand Hunter Safety, Snowmobile Safety, and Water Safety programs.

Coordinate, develop, and conduct "how-to" and information programs for fisheries and wildlife programs.

Provide information on local and State recreation programs and facilities.

Conduct information programs on natural resource issues.

Conduct information meetings and workshops on Land and Water Conservation Fund and Michigan Land Trust Fund programs.

Program existing facilities for year-round recreation activities.

Conduct programs to develop a better understanding and appreciation between urban-rural lifestyles and economics.

Basis For An Urban Recreation Program

The National Urban Recreation Study

Congress recognized the need to take a close look at recreation in the country's urban areas and mandated the National Urban Recreation Study. The mandate is contained in Section 12 of the Public Law 94-422, amending the Land and Water Conservation Fund Act. Major findings of the National Urban Recreation Study show that:

Urban residents want recreation opportunities close to home.

Much open space for recreation exists in urban areas.

Many existing recreation resources are not fully used.

Adequate management, staff, and money are needed to provide recreation.

Coordination among recreation providers is required for better programs.

Greatest recreation deficiencies exist in the core areas of cities.

Cities are turning to the Federal government for recreation dollars.

No national recreation policy exists.

Existing Federal recreation programs do not give priority to urban recreation.

Urban Action Group

In June, 1977, Governor Milliken created an Urban Action Group to develop State policy for urban areas. They have declared that the State's urban strategy is to "... maintain our central cities as economic, cultural and social centers, thus making them once again desirable places to

live, work and recreate." Further, the Urban Action Group requested that selected departments of State government respond to this strategy by considering urban areas in their programs.

The Department of Natural Resources' Commitment

The Department of Natural Resources, recognizing its responsibility to provide recreation, presented an urban recreation proposal in October, 1977. This proposal outlined projects for 1978, and presented specific actions for the Department. The proposal also suggested that the Department develop an Urban Recreation Program that would present its urban recreation policy and program goals.

National Urban Recreation Issues

The following issues identified in the National Urban Recreation Study apply to Michigan's urban areas.

Access to Recreation Opportunities: Access to recreation opportunities is generally assured for those who have automobiles, but such opportunities are often severely limited for people without cars.

Knowledge about Recreation Opportunity: Many people are unaware of existing recreation programs despite efforts to inform the public.

Imbalance in Distribution of State and Federal Aid: The cities have not received an equitable share of the Land and Water Conservation Fund.

State Urban Recreation Issues*

The Department has reviewed the issues presented in the National Urban Recreation Study, identified others, and stated positions. A synopsis of these issues and positions follows.

Proposed Changes in the Land and Water Conservation Fund Program: The only major change in the use of the Land and Water Conservation Fund is to allow its use for indoor facilities when such use would rehabilitate those which complement existing or proposed outdoor facilities.

Changes in the Comprehensive Employment Training Act (CETA) Program: The existing CETA program should be amended to provide more funds for qualified professional supervisory employees, and allow the use of funds for equipment and materials.

The Use of Public Funds by Private Non-Profit Agencies Providing Recreation (YM/YWCA's, Boy and Girl Scouts, etc.): All Federal funds for cultural enrichment, leisure services, or community recreation activities should be made available to private non-profit agencies by contractual agreements with local agencies that have the **major**

*These and other issues were discussed by leading urban recreation professionals at a meeting on Belle Isle, May 25, 1978.

responsibility for providing recreation and park services in that community.

Use of Public Transportation for Recreation: Any proposals for recreation funds above the neighborhood level must include an adequate transportation element to provide central city residents access to the facilities and programs.

A Michigan Urban Recreation Policy: The State of Michigan should develop and adopt an urban recreation policy to dovetail with Federal, State, and local programs.

Another major issue that directly relates to urban recreation is the increasing cost of energy. Rising fuel cost, shortages, and possibly rationing may reduce the public's ability and/or desire to travel for recreation. Thus, an urban recreation program that promotes better utilization of existing, and development of new facilities closer-to-home can save energy and help reduce inflation.

Department Facilities and Programs in the Urban Areas

Parks Division:

There are 5,140 overnight campsites in the urban areas.

There are no existing designated day camping facilities only for day camping use within any state park or recreation area.

Outdoor centers are designated facilities for overnight group use where park personnel are available by request to participate in conducting programs. There are nine outdoor centers in the urban areas.

Interpretive centers provide facilities and staff to conduct educational programs concerning the environment. Four of the State's 18 interpretive centers are in urban areas.

Swimming, picnicking, and hiking are the major day use activities provided for by state parks and recreation areas.

Wildlife Division:

Twenty-nine of the 65 state game areas are located in the urban areas.

These 29 game areas contain 141,000 acres of the State's total 278,800 game area acreage.

Twenty-one percent of the Division's total personnel time goes to operate and maintain the urban game areas, and provide technical assistance.

It cost \$6.2 million in 1976-77 to provide wildlife services. One million dollars (16 percent) was spent in the eleven urban areas.

Waterways Division:

The Division operates 78 of the 144 public access sites located within the urban areas. The remainder are oper-

ated by other State or local agencies. There are 1,023 public access sites in the state.

Four of the 63 Waterways marina facilities are in the urban areas and administered by local government.

Approximately 16 of the Division's 162 annual man-years go to operate the 78 sites in the urban areas.

Fisheries Division:

This Division does not directly operate recreation facilities. Generally, the Division raises and plants fish, manages water for fishing, and acts as a trustee of Michigan's fishing resources.

Ten man-years out of 214 go for direct services to urban areas.

Overall, 72 percent of Fisheries Division's program involves direct management. Forty percent of this is inland fish management, and 32 percent Great Lakes anadromous management.

The activities of the Division fall into four categories: (1) Fisheries Services; (2) Fisheries Research; (3) Inland Lake Management; and (4) Great Lakes and Anadromous Management.

Trails Program:

There are no developed snowmobile trails in urban parks. Parks Division allows snowmobiling on over 88,000 acres of land in 62 state parks and recreation areas throughout the state. Twenty-six parks with 55,000 acres open to snowmobiling are in urban areas.

Wildlife Division has 22 miles of snowmobile trails in two game areas in the urban areas. In addition, 12,000 acres in the Allegan Game Area are open to snowmobiling.

There are over 60 miles of marked cross-country ski trails in nine state parks and recreation areas within the urban areas.

Parks Division lists 56 state parks and recreation areas with hiking trails. Fourteen parks with 154 miles of trails are in urban areas.

Parks Division has 70 miles of horseback riding facilities in 14 parks. All are in the urban areas. Wildlife Division has a facility in the Allegan Game Area.

Two state parks have special bicycle facilities. Maybury State Park has 4 miles of bike paths, and Fort Custer Recreation Area has 8.5 miles of bike paths and routes.

There is one interpretive trail for the handicapped in Bay City State Park.

Recreation Services Division has the trails coordination function to work with the Department's Trails Advisory Council, develop a Statewide Trails Plan, and administer a trails grant program.

Recreation Services Division:

Four different programs are provided by Recreation Services Division:

1. Field Service: Recreation Services Division is responsible for providing field service for the Land and Water Conservation Fund. In fiscal year 1976-77, \$3.7 million (66 percent) of the Statewide total of \$5.7 million was allocated to units of government in the urban areas.
2. Technical Assistance: This is provided to local units in the form of facility design, program design, cost estimates, and special studies. Assistance is also provided in community recreation planning, conducting workshops and training sessions, and disseminating informational material.
3. State Recreation Planning: The Division is responsible for a continuing planning process, and for the preparation, maintenance, and updating of the Michigan Recreation Plan documents.
4. Trails Coordination: Recreation Services Division has the trails coordination function to work with the DNR Trails Advisory Council, develop a Statewide Trails Plan, and administer a trails grant program.

Financial Assistance:

In addition to providing facilities, programs, and services, the Department has a history of financial support through various grant programs to local government. Since 1965, more than \$100 million in grants have been allocated to local governments by the Department. Sources of these funds include:

1. The Land and Water Conservation Fund: Through 1977, the Department has made \$32 million in grants to local units.
2. The Recreation Bond Program: Nearly \$50 million of the \$100 million available was used by local units of government through grants-in-aid from this program.
3. The Waterways Division Grants Program: Provides grants to local governments to construct marinas, harbors of refuge, and public access sites.
4. The Michigan Land Trust Fund: Provides funds to the Department and local units of government for public recreation land acquisition.
5. Other Financial Programs:
 - Youth Conservation Corp.
 - Work Opportunity Resource Corp.
 - Law Enforcement Division recreation safety programs.

**MICHIGAN DEPARTMENT OF NATURAL RESOURCES
REQUESTED URBAN RECREATION BUDGET BY
FUNDING SOURCE AND REGION, 1979-80**

Funding Source	(Thousands of Dollars)			Percent of Total
	Develop-ment	Land Acquisi-tion	Total	
General Fund	\$ 7,806.0	\$1,430.0	\$ 9,236.0	55%
Land and Water Conservation Fund	4,982.5	890.0	5,872.5	35
State Duck Stamp Fund	—	180.0	180.0	1
State Park Improve-ment Fund	800.0	—	800.0	5
State Waterways Fund	42.8	100.0	142.8	1
Other Federal Funds	555.0	—	555.0	3
Total	\$14,186.3	\$2,600.0	\$16,786.3	100%
Region				
1	\$11,466.3	\$1,400.0	\$12,866.3	80%
A	6,713.8	—	6,713.8	42
B	960.0	—	960.0	6
C	3,792.5	400.0	4,192.5	26
3	76.0	—	76.0	<1
4	30.0	—	30.0	<1
5	310.0	—	310.0	2
6	1,305.0	200.0	1,505.0	9
7	150.0	—	150.0	1
8	199.0	200.0	399.0	2
14	650.0	—	650.0	4
Total	\$14,186.3	\$1,800.0	\$15,986.3 ²	100%

¹ \$1 million could not all be broken down by sub-regions.

² Does not include \$0.8 million for land acquisition by Wildlife Division in Regions 1C, 2, 3, 5, 6, 7A, 7B, 8A and 14.

TABLE 6

MAJOR CITIES IN MICHIGAN'S ELEVEN SMSA's^{*}

	1970 Population	Population Within 30 Minutes Travel Time From CBD
Detroit	1,511,482	2,937,170
Allen Park	40,747	—
Dearborn	104,199	—
Dearborn Heights	80,069	—
East Detroit	45,920	—
Garden City	41,864	—
Lincoln Park	52,984	—
Livonia	110,109	—
Pontiac	85,279	1,010,380
Roseville	60,529	—
Royal Oak	85,499	—
St. Clair Shores	88,093	1,378,560
Southfield	69,285	—
Sterling Heights	61,365	—
Taylor	70,020	—
Troy	39,419	—
Warren	179,260	—
Westland	86,749	—
Wyandotte	41,061	1,322,990
Grand Rapids	197,649	459,920
Wyoming	56,560	438,830
Flint	193,317	467,530
Lansing	131,546	326,650
East Lansing	47,499	335,410
Ann Arbor	99,797	320,770
Saginaw	91,849	321,730
Kalamazoo	85,555	232,720
Bay City	49,449	327,290
Jackson	45,484	169,090
Muskegon	44,631	182,900
Battle Creek	38,931	155,270

* Battle Creek, the smallest SMSA central city, was used to determine which cities to include on the list.

TABLE 7

Federal Recreation Programs

United States Forest Service

Management Goal: The Forest Service administers two national forests in Michigan's Upper Peninsula and one in the Lower Peninsula. A major Forest Service management goal for these forests is to provide and administer a full range of recreational opportunities. The national forests provide both developed and dispersed recreation, but future goals are directed toward dispersed activities as priority items. The national forests will place greater dependence on the private sector and other government units to provide many of the related developed sites and facilities. Close cooperation between all providers of recreation will be essential in order to ensure that there is a proper balance for developed and dispersed activities.

Management Emphasis: The five-year development program will emphasize dispersed day use. Development emphasis will involve motorized trails and foot trails with support facilities. Responsibilities will be carried on at present levels for timber management, endangered and threatened species, fisheries, wildlife and development of primitive areas for controlled recreation use. Botanical, archaeological, geological and historically significant areas will continue to be designated and protected.

Priority considerations in the five-year land acquisition program are to:

- Meet access or other administrative needs and provide legal access.
- Protect resources against trespass, fire and pollution.
- Prevent damage to national forests.
- Meet research needs and address important resource conservation programs.
- The management of the Pere Marquette National Wild and Scenic River is a priority item. The management plan for this stream is currently being developed.
- The management and land acquisition programs for the AuSable and Manistee river systems also are high priority. Both streams (including the Pine River) are currently under study for inclusion into the National Wild and Scenic River System.
- The proposed Nordhouse Dunes, Government Island, Horseshoe Bay, Sylvania, Sturgeon Gorge Carp River, Nissawinagong Wildernesses are priority management concerns.
- Forest land management plans, now being developed, will provide the basic direction for meeting outdoor recreation responsibilities on each national forest.

- The control of concentrated dispersed recreation activities such as heavy canoe use, ORV problems, and large group camping will be coordinated with the DNR.

Land acquisition expenditures are expected to average about \$600,000 each year, with recreation development estimated at \$500,000. This includes acquisition costs for protection of key sites along rivers as part of the river composite plan program.

National Park Service

Management Goal: One national park and two national lakeshores are administered by the National Park Service in Michigan. All are in the northern part of the state and have outstanding natural features. National Park Service management goals for Isle Royale National Park, Pictured Rocks National Lakeshore and Sleeping Bear Dunes National Lakeshore are identified in enabling federal legislation for each area and in other federal legislation creating the National Park Service. The overall management goal for the three areas is conservation of their scenic, natural and historic features through means that will assure their enjoyment by future generations.



Management Emphasis: While the overall goal is applicable to these three areas, the management thrust is different for each. Isle Royale is largely protective of an isolated environment. The desire is to maintain the current level of use while increasing the quality of the user's recreation experience. Management of Pictured Rocks is largely preservation oriented, although there will be more recreational emphasis on the area's natural and cultural features. Sleeping Bear Dunes' management emphasis is similar, but must also consider the lakeshore's impact on the local economy.

Land acquisition remains a priority consideration for both Sleeping Bear Dunes and Pictured Rocks. Five-year development needs at Isle Royale center on water treatment and sewage facilities. Funds for Pictured Rocks will construct a visitor contact station and various seawalls, and restore a lighthouse. Development needs for Sleeping Bear Dunes include restoration of a Coast Guard station and rehabilitation of a campground and boat dock.

United States Fish and Wildlife Service

Management Goal: All wildlife refuge areas are maintained for the fundamental purpose of: preventing any migratory bird species from becoming "Threatened;" maintaining migratory bird population levels, with optimum species diversity, consistent with the availability of habitat and the demands of society; preserving and managing habitats that are needed to achieve migratory bird population goals; achieving migration and distribution patterns that are most beneficial to both migratory birds and

society; minimizing losses of migratory birds to disease, predation, illegal kill, crippling and other adverse influences.

Management Emphasis: Master plans are being developed for the Seney and Shiawassee refuges, which will dictate allowable activities for the two refuges, including where they will be allowed. Public input through hearings and other methods has been sought throughout this planning effort.

The principal program at Seney will remain production of waterfowl and provision of suitable habitat for endangered or threatened species, as well as maintenance of adequate water areas for resting and feeding of waterfowl. Hunting will continue to be allowed unless waterfowl population fluctuations deem otherwise. Maintenance of adequate water supply is currently being aided by a five-year program (due to end in 1981) to replace and repair worn out and eroded water control structures. If all the priority needs are not met by the end of 1981, this program should be extended.

Main programs at Shiawassee Refuge will be dike and ditch restoration to protect the area from frequent flooding and assure its ability to maintain and control water levels for waterfowl production, resting and feeding. Public use programs will be increased through additional staff, trails, increased activities and protection of established trails and dikes. Hunting levels will remain virtually unchanged. Land acquisition will be confined to inholdings to protect floodplains, water resources and limited public use facilities, if needed.



Heritage Conservation and Recreation Service

Management Goal: The primary goal of the Heritage Conservation and Recreation Service (HCRS) is to ensure adequate planning, provision, and protection of outdoor recreation and heritage resources in the United States. HCRS replaced the Bureau of Outdoor Recreation in 1978. Creation of HCRS reflects increased national concern to protect and wisely use the nation's natural, cultural, and recreational resources.

Management Emphasis: HCRS's major areas of responsibility are:

- to facilitate coordination, planning, and financing of public outdoor recreation at all levels of government;
- to promote the wise development and use of outdoor recreation resources by both public and private interests; and
- to identify, establish, and maintain registers for heritage resources, and develop corresponding preservation policies and programs.

Major programs administered by HCRS include the Land and Water Conservation Fund, Urban Park and Recreation Recovery, National Register, Historic Preservation Grants-In-Aid, and Technical Assistance. HCRS has major involvement in the Wild and Scenic Rivers Program, National Trails System, and Water Resources Planning Program.

The following programs support recreation providers. These programs influence quality and quantity of recreation resources, and the recreation experience itself. They range from regulatory to advisory.

State Land Management Programs

State land management programs promote appropriate use of land, water and air resources through various processes and enhance the ability of state agencies, local government, regional planning agencies, private consultants, industry and the public to use planning and zoning techniques and principles. The process for developing a land management plan for Michigan began even before statehood. New federal and state laws and programs, however, have been developed in response to more recently identified environmental concerns.

Michigan's land management programs fall into three areas. The first is the type of comprehensive planning called for under the Department of Housing and Urban Development's (HUD) section 701 program, and management planning for coastal areas. The second kind of program emphasis involves actual land use regulation to protect natural resources under state law. Finally, there are incentive management elements that encourage land uses to preserve natural resources.

HUD Section 701 (P.L. 83-560 and P.L. 93-383)

As part of compliance with the Housing and Community Development Act, each state receiving HUD comprehensive planning assistance grants under section 701 must prepare a "housing and land use element." The DNR has been assigned responsibility to develop a state land use program and prepare the HUD land use element. The development of a Michigan land management plan has been based upon a philosophy of partnership between state, local governments and the private sector. To be successful, a land management program must have the support from those that will be most affected by it, the land-owners of Michigan.

Coastal Management (P.L. 92-583 and P.L. 94-370)

This program, developed with federal funds received under the Coastal Zone Management Act, provides for the preparation and implementation of rational programs for managing coastal resources.

A state coastal management program and related environmental impact statements have been developed and approved. Program development required definition of the coastal area and identification of broad management needs and specific areas in need of management. Among the specific areas that have been identified are those fulfilling recreation or cultural needs. It is important to note that the coastal management program does not provide for land acquisition or construction. Even though it identifies an area that needs recreation management, if Land and Water Conservation Funds are to be used, the project must undergo review to make certain it conforms to funding priorities identified in the coastal management plan.

The coastal management program document identifies state regulatory and incentive elements instrumental in carrying out coastal resource management.

With the approved management program, Michigan has received \$1.6 million in grant monies for implementation. The current budget allots 50 percent for statewide management implementation. The balance of the funds has been passed on to local units for site specific management activity. Michigan has been selected as a pilot area for preservation and restoration projects. Pilot guidelines require that grants be small (\$50,000 maximum). Thirteen projects have been approved—eight for "natural areas" and five for "historic sites."

Pittman-Robertson and Dingell-Johnson Enabling Acts

Pittman-Robertson (P.L. 75-415) provides state-federal cooperation in wildlife restoration projects. Since its enactment, the state has had access to federal funds in the amount of \$32,270,000 for wildlife restoration and \$1,575,000 in hunter safety funds. Michigan P.A. 281, 1939 authorizes Michigan participation in the program.

Dingell-Johnson (P.L. 81-681) provides state-federal cooperation in selection, development and maintenance of fish restoration and management projects. Approximately \$10,212,000 has been available for fish restoration. Michigan P.A. 111, 1951 authorizes Michigan participation in the program.

These two programs play the major role in assisting our fish and wildlife programs.

Soil Erosion and Sedimentation Control (Act 347, P.A. 1972)

The purpose of this program is to reduce the serious problems of erosion and its resulting sedimentation of state waters. It provides technical assistance to local governments, land developers, engineers, architects, planners and builders in the prevention and control of soil erosion. The program also provides enforcement support to local governments.

A Phase I Erosion Control Training Program has been developed and instituted statewide, which provides training in erosion and sediment control. A Phase II training program followed to deal with in-depth technical information on how, when, and where erosion control measures should be taken. A Phase III program, to be developed in 1979, will test training effectiveness through examinations of those involved in the erosion control program. A DNR enforcement training program was conducted in 1978 for department personnel who have had Phase I and II training.

Shorelands Protection and Management (Act 245, P.A. 1970)

This program guides management of shoreland properties to minimize environmental and property damage resulting from flooding and erosion, and protect and enhance Michigan's sensitive and diverse shoreline ecosystems.

This program gives the DNR legal authority to restrict shoreland uses through state permits or state approved local zoning. It addresses only areas designated as environmental, high risk erosion or flood risk, all of which extend landward from the ordinary high water mark of the Great Lakes and connecting waters. Flood risk areas are located within the 100-year floodplain of the Great Lakes. Environmental areas are those deemed necessary to preserve fish and wildlife. High risk erosion areas are those determined to be eroding at one foot or more per year. Both environmental and high risk erosion areas have a 1,000 foot limit inland from the ordinary high water mark.

Nearly 200 miles of shoreline have been designated as high risk erosion areas. In the next year this amount is expected to double, and within two years the program will

have been completed, having officially designated all 450 miles of the originally identified high risk erosion areas. So far, 10 communities have been designated as flood risk areas. There should be 60 to 80 within the next year, and 191 by 1984. One hundred sixteen miles of Great Lakes shoreline have been designated environmental areas. By 1980 there should be 300 miles so designated.

Coastal wetlands are receiving special attention under this program to determine their value in maintaining water quality, erosion control and recreation. This information also will be useful in designating wetlands as environmental areas under the program.

Great Lakes Submerged Lands (Act 247, P.A. 1955)

This program protects the public trust in the Great Lakes and Lake St. Clair by regulating construction activities below the ordinary high water mark. The act requires the DNR to review applications for permits to use Great Lakes bottomlands and authorize conveyances in Great Lakes bottomlands to private and public interests only when they will not substantially affect public use. State-owned bottomlands can be deeded under this program if there is a determined need to fill the land for shore protection, shore straightening, erosion control or other reasonable uses. It also allows the Department to enter into leases with private parties for marina purposes, and to enter into other types of agreements that would benefit the public and private use of the upland.

In general, the Department does not authorize permits for filling state-owned bottomland for mere convenience or enlargement of real estate. However, permits will be considered for filling to accomplish erosion, flood, drainage and sanitation control, or straightening of irregular shorelines. An important program goal is to resolve known trespasses in a timely manner.

Inland Lakes and Streams (Act 346, P.A. 1972)

This program protects the public trust regarding waters and bottomlands of inland lakes and streams, and regulates marina operation on inland waters. It applies to all inland waters, whether navigable or not, including the Detroit, St. Clair and St. Marys Rivers, but excludes ponds of less than five surface acres.

The program was not designed to halt all waterfront development. However, it does enable conservation of natural resources including fish and wildlife habitat. A permit must be obtained from the department prior to dredging, filling or constructing below the ordinary high water mark; erecting, maintaining or operating a marina; creating, enlarging or diminishing an inland lake or stream; interfering with natural flows, dredging within 500 feet of an existing waterway, or dredging where the ultimate purpose is connection to an existing waterway. Permit application review involves the DNR Wildlife, Fisheries, Water

Quality, Water Management divisions, and Soil Erosion and Sedimentation Control program; the Michigan History Division and the Michigan Department of Public Health.

The program processes about 2,500 applications each year. Staff is currently developing a computerized record system to facilitate retrieval and centralize information, thus making the permit process more efficient. There are currently about 350 marinas without permits, and new personnel have been added to bring them into compliance. There also is a cooperative agreement with the Corps of Engineers to work with the DNR on applications that involve federal and Michigan statutes, as is the case with some 40 percent of the applications.

Sand Dune Protection and Management (Act 222, P.A. 1976)

This program recognizes the importance of Michigan's Great Lakes sand dunes. The majority of Michigan's industrial sand reserves are located adjacent to the Lake Michigan shoreline in dune formations. Dunes, by their very nature, have high aesthetic and recreational values. Act 222 gives the DNR authority to regulate, through the issuance of permits, sand dune mining activities within designated areas.

Designation of sand dune areas is accomplished through the promulgation of administrative rules. This process provides an opportunity for review and input from interested citizens, organizations, governments and industry representatives. The act forbids sand dune mining in these areas without a Department permit. Applicants must submit an environmental impact statement for the proposed mining activity, a description of the mining activity and planned reclamation and a 15-year mining plan outlining the areas to be mined and amount of sand to be taken from each.

The Department has designated the first series of sand dune areas¹ for protection under Act 222. These are seven major parcels of land all located on Lake Michigan and including almost all known active sand dune mining operations in the state. The areas have most of Michigan's sand dune reserves. They cover 104,000 acres and 111 miles of shoreline, and contain some 20 commercial sand mining operations that remove about 3.5 million tons annually. Of this total, 25,600 acres and 23 miles of shoreline (roughly 25 percent of the area) is in state ownership.

During the next few years the DNR will continually monitor ongoing mining operations and review permit applications. The Department also will seek designation of an additional series of sand dune areas. In addition, research

will be conducted on the environmental impact of sand dune mining. Finally, the DNR will seek legislation regarding sand and gravel mining on inland sites. Numerous accidental drownings occur at these sites, indicating a need for additional safety measures. Further, upon completion of mining operations these sites have the potential for conversion to valuable recreation areas.

Farmland and Open Space (Act 116, P.A. 1974)

This program tries to curb the continuing loss of farmland and open space land in Michigan. Because land must be assessed according to its true cash (developed) value, there has been a steep increase in property taxes on agricultural and open space land, particularly near urban areas. This tax pressure has caused losses of important agricultural and open space lands. Under the Farmland and Open Space Preservation Act 116, the State enters into development rights agreements with the landowners. These 10-year minimum agreements guarantee certain income and property tax benefits and exemption from specific assessments, in exchange for the private ownership remaining in agricultural or open space use. The incentives are designed to slow the loss of farmland or open space lands to development.

As of January, 1979, more than 700,000 acres of land in 66 counties are protected by such agreements and are referred to as designated open space. Another category includes lands along designated natural rivers and lands designated as environmental areas under the Shorelands Protection and Management Act. The DNR will continue to encourage landowners who meet requirements to enter into agreements. Participation, however, is entirely voluntary and only the landowner can decide whether such an agreement will be beneficial to him.

Natural Rivers (Act 231, P.A. 1970)

This program seeks to preserve and enhance, in reasonably natural conditions, those rivers and streams having scenic, recreational and ecological values attractive to both riparian owners and public users.

There are three classes of river designation—Wilderness, Wild-Scenic and Country-Scenic—based on general river setting and characteristics. Management objectives for rivers in the program depend on both the river classification and individual river characteristics. Objectives vary for each classification and often between rivers within each classification. Factors to be considered when developing management objectives for individual rivers include: (1) characteristics and extent of present development; (2) potential for development based on terrain, accessibility or ownership patterns; (3) amount of publicly owned frontage; (4) present and potential uses; and (5) attitudes of local planners, administrators and citizens who will be affected by natural river zoning.

¹ For a detailed description of the areas designated reference **Proposed Designated Sand Dune Areas, Series I**, Geological Survey Division, Michigan Department of Natural Resources, Lansing, Michigan.

Michigan's Natural Rivers Program achieves river protection through zoning of land adjacent to the streams. This is in contrast to the federal or most other state programs, where protection is accomplished by acquisition, either in fee simple or by scenic easement, of the land surrounding a stream. While relying mainly on zoning, Michigan's program may take other management actions. Land purchase occurs only when the owner consents; condemnation is not allowed. Review for compliance with the adopted river management plan is also provided for other projects such as highway construction, utility transmission lines, access sites and publicly developed water management projects.

It is essential that the DNR work closely with local government officials and citizens to jointly develop sound and acceptable long-range comprehensive plans for proposed natural rivers. After completion of these plans, including public hearings, the Michigan Natural Resources Commission may make the Natural River designation. The involved counties and townships then have one year in which to enact zoning ordinances that conform to the river plan. If they do not, the Commission can itself adopt a zoning rule that would serve the same function as a local zoning ordinance, but would be administered by the State.

The Department favors zoning by the counties and townships in accordance with state guidelines, rather than zoning by the State. The concept of local control of land use problems is an established philosophy in Michigan. Local officials and citizens are most familiar with their own land use problems and are best qualified to administer land use regulations. The Natural Resources Commission believes that sound planning and administration of local zoning ordinances will protect natural rivers, while assuring that administration is kept at the level of government closest to the people. In line with this objective, the Commission has adopted a policy emphasizing assistance to local government units and riverfront property owners. This includes drafting and enforcement of zoning and local watercraft controls, selection of building sites, erosion control and streambank vegetation, river clean-ups, floodplain studies, property tax programs and other programs leading to protection of natural rivers.

Thirty rivers, 10 from each DNR administrative region, have been placed in a first priority group recommended by staff, field personnel and groups or organizations interested in river preservation. These 30 rivers have a combined length of approximately 6,000 miles that might be eligible for designation. Presently, eight rivers have been designated as natural rivers by the Commission and work is in various stages on 12 others.¹ As local interest

develops, additional rivers may be added to the study group.

Some special opportunities that arise are of such quality to be of local, regional, state and national significance. The Pere Marquette, AuSable and Manistee Rivers are such examples. The Pere Marquette is now a National Wild and Scenic River and will receive federal protection, along with DNR management support activities such as fisheries management. A special opportunity exists to place large portions of the AuSable and Manistee Rivers in public ownership. The opportunity to acquire some 4,000 acres has been developing for several years, and it is now deemed desirable to make the purchase. Acquisition is essential to assure long-term protection of these unique resources and will help provide continued and enhanced recreation use of these resources for everyone.

Wilderness and Natural Areas (Act 241, P.A. 1972)

Despite high concentrations of population, industry and agriculture in the Southern Lower Peninsula, small natural enclaves and some fairly wild areas exist. More extensive wild lands, some large enough to be termed wilderness, are found only in the northern two-thirds of Michigan. These areas are a valuable and fragile legacy.

The Wilderness and Natural Areas Act was enacted to protect such areas. It lists three area types: wilderness, wild and natural. By broad definition these may be an area of land, water or both that has retained, re-established, or can readily re-establish its character; and possesses unusual or rare flora or fauna; has biotic, geologic, physiographic or paleontologic features of scientific values; or offers outstanding opportunities for scenic pleasures, enjoyable contact with nature or wilderness experiences. The legislation provides for selection and dedication of wilderness, wild and natural areas on lands under DNR control, and selection and designation of such areas on other public or private lands by voluntary agreement between the landowner and the Michigan Natural Resources Commission. No more than 10 percent of the land under DNR control may be dedicated. The act requires the Commission to attempt to provide wild and natural areas insofar as possible "in relative proximity to urban centers of more than 100,000 population." No private land areas have yet been designated, although 18 areas totaling 52,981 acres, all on public lands, have been dedicated. Legislative action is pending on one additional area totaling 2,109 acres, and hearings are scheduled on six other areas proposed for dedication, these totaling 24,580 acres. A systematic inventory for identification of the best examples of our natural heritage is now being prepared. Input and cooperation will be solicited from many universities, public agencies and the general public. State designated wilderness and natural areas

¹ Reference maps of these rivers are available in Land Resource Programs Division, Michigan Department of Natural Resources, Lansing, Michigan.

compliment federal wilderness areas at Seney Wildlife Refuge, Huron Islands, Michigan Islands and Isle Royale.

Natural Beauty Roads (Act 150, P.A. 1970)

This program provides for the designation of certain local Michigan roadways as Natural Beauty Roads, to establish enjoyable slow-drive areas having unique or significantly beautiful borders of trees, shrubs and wildflowers. Widening, mowing, spraying and other road maintenance or improvement activities are restricted on these roads.

Natural Beauty Roads are proposed by local residents for designation by their county road commissions, which conduct public hearings before making final determinations. The DNR serves only to develop guidelines and procedures for program administration. At this time 72 roads in 18 counties, totaling 143 miles, have been designated.

Water Quality and Recreation

Eleven percent of Michigan resident recreation is based on water bodies other than swimming pools, and the quality of these waters is an extremely important factor in their ability to provide recreation opportunity. Recreational use of water has several aspects. Some involve human body contact such as swimming, sailing and water skiing. Fishing and hunting or trapping of waterfowl and furbearers are other important elements. Also important is the aesthetic appreciation of the water environment and its inhabitants.

In addition to their recreation uses, Michigan's waters also are used for agriculture, drinking water, industrial processing and navigation. Clean water is essential to protect these many uses and to maintain public health and welfare. Recognizing this, the Michigan legislature established the Water Resources Commission (Act 245, P.A. 1929) to protect this state's water resources. The Commission endeavors to protect water quality by restricting pollution. Congress also proceeded to protect the nation's waters with the passage of the Clean Water Act of 1972 (P.L. 92-500), which mandates "... that the discharge of pollutants into the navigable waters be eliminated by 1985," and that by 1983 wherever attainable water quality provide "for protection and propagation of fish, shellfish and wildlife, and for recreation in and on the water."

Michigan is now implementing new water quality standards to ensure that the goals of the Federal Clean Water Act will be met.¹ These standards protect all the waters of the state "for total body contact recreation except in high risk areas adjacent to, or downstream from, urban areas." And even in such high risk areas the waters are protected

for partial body contact. This protection affords the state ample supplies of water suitable for human contact recreation.

The quantity and quality of water-based recreation depends greatly on the resident fish and wildlife. Fish can generally survive if there is enough dissolved oxygen for them to breathe and toxic chemical levels are low. However, high biochemical oxygen demand (BOD), nitrates or phosphorus levels can directly or indirectly deplete dissolved oxygen and suffocate fish. Higher water temperature also decreases oxygen solubility.

Turbidity, or the resistance by the water to the passage of light, also can be a negative factor. Humans find turbid water less aesthetically pleasing, fish may suffer gill damage from turbidity caused by suspended particles and turbidity blocks out the sunlight aquatic plants need to survive. Likewise, high acidity levels in water can cause tissue damage to fish, waterfowl, furbearers and humans on contact. Accordingly, Michigan's waters are protected to keep acidity within the "neutral" range. Because there are differences in tolerance of fish to warming of water, only some waterways are protected for cold water species such as trout.

General water quality can be measured by the Water Quality Index (WQI), a weighted sum of measurements on none chemical, physical and bacteriological water quality parameters.¹ An assessment of Michigan water quality finds most streams with good to medium average WQI values for the year ending September 30, 1977. The only sampling station where the average WQI was "poor" was the Flint River below Flint. The Flint metropolitan area also had the greatest urban decrease in average WQI. The difference between upstream and downstream WQI averages shows the reduction in water quality as a stream passes through an urban area. The Grand River at Jackson, the Kalamazoo River at Kalamazoo and the Clinton River at Pontiac all show marked reductions in water quality below their respective urban area.

Over the past 10 years there has been a slow but steady increase in WQI values in major Great Lakes tributaries. The greatest improvements have occurred in populous Southern Lower Michigan and as urban areas upgrade their sewage treatment facilities, water quality will continue to improve. The absolute water quality improvement rate will slow as these point sources are eliminated. The limiting factor will then be control of non-point sources such as agricultural and storm drain runoff.

Due to the increased protection for body contact and improvement in general water quality, the rivers of Southern Lower Michigan offer considerable potential for in-

¹ **Michigan Water Quality Standards**, tentative 1979. Water Quality Division, Michigan Department of Natural Resources, Lansing, Michigan.

¹ **Water Quality and Pollution Control in Michigan**, 1978. Michigan Department of Natural Resources publication number 4833-9801, Lansing, Michigan.

creased water-based parks, and public access for canoeing and angling. Despite intensive urban development in this part of the state, many river segments are free from residential encroachment. Most flow through farmland with heavily wooded floodplains. The terrestrial impression from a float trip on large portions of the Red Cedar, Shiawassee, Huron or Grand rivers is startlingly wilderness-like. Low stream flow during July and August can make float trips impractical on some southern streams, while decreasing their aesthetic appeal. Despite such drawbacks, much recreational potential has resulted from water quality improvements, making Michigan lakes and streams more attractive for recreation than ever before.

The Great Lakes and inland lakes are classified according to trophic status. The Trophic State Index (TSI) measures productivity within the lake and refers to the amount of enrichment by nutrients and living material present. Lakes can be classified by increasing TSI from oligotrophic and mesotrophic to eutrophic (the most enriched). About half of Michigan's inland lakes with 50 or more surface acres have been so classified. Just over one third of them fall in the eutrophic class. In the Upper Peninsula, 40 percent of classified lakes are eutrophic, representing 41 percent of classified surface area, while 44 percent of the classified lakes in Southern Lower Michigan are eutrophic, making up 71 percent of classified surface area. The Great Lakes also have been classified using biological and physico-chemical data. Eutrophic conditions exist in Green, Thunder and Saginaw bays, western Lake St. Clair and western Lake Erie. Southern Lake Huron falls in the mesotrophic class, with southern Lake Michigan on the oligotrophic-mesotrophic borderline. Although eutrophic lakes have less aesthetic appeal, they may be excellent for swimming or fishing. Additionally, inland lake protection or rehabilitation through long term lake watershed management will assure these resources will be available for future recreation.

An additional concern relating to water and recreation regards toxic materials. Except for localized areas or under spill conditions, these materials do not occur in concentrations that are acutely toxic to humans, fish or wildlife. There is great concern, though, about toxic substance bioaccumulation in aquatic food chains. Damage from DDT build-up in the environment, for example, has shown up both in birds and humans. Bioaccumulation of toxic substances in fish has prompted warnings against their consumption by humans. Michigan has a toxic and hazardous materials management program to control and reduce the hazards resulting from use, discharge, transport, disposal or spillage of toxic materials or substances. One element of this program is the "Critical Materials Register," which identifies use and discharge of hazardous substances. Identification will facilitate controlling the introduction of bioaccumulatory materials in the environ-

ment, thus minimizing the problem. In addition, measures are now being taken towards identifying and solving past critical material disposal problems in Michigan.

Air Quality and Recreation

Outdoor recreation is influenced by air quality, particularly in urban areas where pollution incidents sometimes occur. Air pollution has its greatest health impact on persons with chronic respiratory problems, can be generally displeasing to human senses and can cause physical damage to recreation resources.

The Federal Clean Air Act as amended in 1970 (P.L. 91-604) established ambient air quality standards defining allowable concentrations for suspended particulates, sulfur dioxide, nitrogen dioxide, carbon monoxide, photochemical oxidants (ozone) and hydrocarbons. Two standard levels were established for each pollutant, a primary standard to protect public health and a secondary standard to protect public welfare, including damage to buildings, plants and animals. Each year, a statewide air sampling network gathers pollution data at more than 350 monitoring sites.¹ Air samples are taken and analyzed for five of the six major pollutants, excepting hydrocarbons. Existing levels of hydrocarbons have been deemed not to pose significant problems at this time, thus hydrocarbon monitoring has been minimal. Hydrocarbons, however, are important in forming ozone, and must be controlled in order to meet the ozone standard. For the other pollutants, an area is considered to be in violation of these standards any time readings show the air exceeding quality standards for that pollutant.

Latest published DNR data shows primary standard violations for suspended particulates in five counties: Calhoun, Genesee, Monroe, Saginaw, and Wayne. The secondary particulate standard was met in 16 of the 36 monitored counties, and it is believed secondary standards are being met in the 47 non-monitored counties. Primary and secondary sulfur dioxide standards are met in all of the 30 monitored counties, and it is believed both standards were met in the remaining Michigan counties. There were no violations of nitrogen dioxide standards, although carbon monoxide standards were violated in Macomb, Saginaw and Wayne counties.

Photochemical oxidants (ozone) continue to be Michigan's most pervasive air pollutant, with standard violations monitored at every sampling station. The ozone problem is extremely complex and believed to be an extensive national problem, requiring a coordinated regional or national control strategy. The DNR Air Quality Division is actively pursuing development and implementation of a plan to control ozone concentrations.

¹ **Michigan 1977 Annual Air Quality Report.** Air Quality Division, Michigan Department of Natural Resources, Lansing, Michigan.

From the standpoint of all major pollutants, however, great improvements have been made in recent years due to voluntary compliance by polluters and enforcement efforts by the Air Quality Division. In the early 1970's numerous violations of sulfur dioxide standards occurred from the burning of sulfur-laden fuels. Today all areas in Michigan have been brought into compliance. Likewise, great reductions in suspended particulate levels have been achieved, as have reduced carbon monoxide levels.

Nevertheless, much work remains. The high ozone levels found not only in Southern Michigan, but in much of the country, are of great concern. In addition, increased attention will be directed at the discharge of toxic chemical vapors such as vinyl chloride and PCBs. Air quality improvements can only enhance outdoor recreation potential.

Endangered and Threatened Species

Under Michigan's Endangered and Threatened Species Act (Act 203, P.A. 1974) a program was implemented to attain stable populations of endangered, threatened and rare plant and animal species found within the state. This program is administered by the DNR.

The main program thrust is to help attain goals set by the Secretary of the Interior. This involves development of conservation management programs, research to establish the current status of resident populations and implementation of management practices to promote the survival of species identified as endangered or threatened.

Michigan's program provides additional protection to species listed by the Secretary of the Interior as endangered under authority of the Endangered Species Act of 1973 (P.L. 93-205). This protection applies to possession, trade, transportation and taking of endangered species.

The state's initial actions have been to develop management programs for resident species already declared endangered by the federal government. Studies have been undertaken to identify plant or animal species warranting nomination for placement on federal or state lists as endangered or threatened.

On December 2, 1976, the state list of endangered species became effective as an administrative rule. Since then, efforts have been made to identify critical habitats, first on public land and later on private land. The end result will be management and land acquisition plans and special regulations for each endangered or threatened species. These plans and regulations will form the basis for implementation as funds become available from state, federal and private sources. Development and land acquisition deemed necessary to protect endangered species will be given top priority.

There are few limitations on the scope of the endangered species program. All of Michigan and its 24 million acres of Great Lakes waters are included. The only statutory limitation excludes species of the order **insecta** determined to be a pest by either the Michigan Natural Resources Commission or the Secretary of the Interior. And, for practical reasons, lower forms of plants and simple microscopic animals will not be considered. The most critical factor in this program's success is the identification and protection of critical habitats required for the survival of endangered and threatened species. Existing state laws provide many options for preserving crucial land and water areas.

Special Populations

Extremely conservative estimates reveal that four to five percent of Michigan residents suffer from some type of permanent disability demanding special training, hospitalization and/or rehabilitation. Another four to five percent are temporarily disabled, either educationally, medically or emotionally, and are receiving treatment to either overcome or compensate for their affliction. In addition to these, it is estimated that even a higher percentage of state residents are handicapped for brief periods as they recuperate from injuries, illness or surgery. These figures will continue to grow as medical advances enable more people to survive accidents, illnesses, injuries, premature births and previously fatal diseases.

Families affected by handicapping conditions are not restricted to any single economic class. The plight of the poor is heard about most frequently, since they have little or no financial resources to help themselves. However, the recent integrated and full rights movement for the handicapped and elderly has shown that poor people and rich people alike are victims of permanently and temporarily disabling conditions. Today these handicapped individuals can be found in state-operated institutions and hospitals, private residential schools, nursing homes, foster homes and in local communities.

Historically, educators, medical personnel and social workers have focused upon schooling, social skills, vocational training and medical intervention to help handicapped persons adjust either to institutional life or reentry into community life.¹ Handicappers have been almost completely excluded from recreation in the belief that they are physically unable to engage in sports and other strenuous activities. However, over the past several decades, the "helping professions" have looked more closely at recreation and have begun to incorporate it into their

¹ **Leisure Activity Participation and Handicapped Populations: Assessment of Research Needs**, 1976. Peter J. Verhoven & Judith E. Goldstein, Coordinator; NRPA and Bureau of Ed. for the Handicapped, Dept. of HEW, Washington, D.C.

programs as a building block to achieve other goals for handicappers.

Parks, campgrounds, fishing sites, game areas and other outdoor recreation facilities are operated under the assumption they are open to anyone who might care to use them. However, such facilities are not always suited to the needs or feasible for use by the handicapper.

A major DNR goal is to increase the quality and quantity of recreation opportunities for Michigan's special population citizens at both state and locally operated recreation facilities. The Department has taken steps to achieve this by identifying a staff person as a special populations program coordinator.

The Department, through its special populations program, will provide technical and advisory assistance to state and local governments in planning and developing handicapper recreation programs, facilities and areas; collecting and disseminating handicapper recreation reference material; maintaining an up-to-date file on handicapper programs, legislation and barrier-free design material; maintaining contact with the public and recreation-providing agencies to emphasize the positive impact of recreation on the lives of handicappers; coordinating training through workshops, seminars and conferences; keeping the department informed on all state and federal legislation pertaining to the handicapped; and seeking grants to help the Department and local units develop programs and facilities for the handicapped.

Recently the Department was given recommendations through which it can better address the needs of the handicapped through its existing programs. They were developed by the Governor's Office and by a handicappers consumer team assigned to the Department. Representatives from DNR divisions have been assigned to write an implementation plan for these recommendations, including cost implications and timetables.

Department recommendations would: include in each division an awareness seminar to focus on the needs of the handicappers; include handicappers in DNR information publications; mandate that all recreational programs and facilities be accessible to the handicapped; include handicappers on all DNR boards and commissions; assure that handicappers not be denied employment in any DNR program; actively recruit handicappers for college intern programs; make library facilities accessible to wheelchair users; survey DNR facilities to determine their accessibility and develop plans to remove architectural barriers; assure that all telephones and other communication devices are accessible in Department facilities; institute an employee and supervisory training program on sensitivity and civil rights as these relate to handicappers and minorities; require that all hearings, meetings and conferences called by the DNR be held in accessible facilities;

allow the Department's affirmative action plan to be reviewed by the Michigan Commission on Handicapper Concerns in conjunction with the Michigan Equal Employment Opportunity Council; and assure that all Department planning is conducted to create an environment free of architectural and attitudinal barriers. The Department is also working with the Michigan Commission on Handicappers Concerns to get its programs and facilities in compliance with Section 504 guidelines, Rehabilitation Act of 1973 (P.L. 93-112).

Furthermore, the DNR is planning to develop an outdoor recreation plan for the special populations as an appendix to the Statewide Comprehensive Outdoor Recreation Plan. The special population plan will address outdoor recreation needs; Department goals, objectives, policies and guidelines; description and statistical information on the special populations; state and federal legislation related to outdoor recreation for special populations, status of Department facilities and programs in terms of accessibility and useability; funding sources for outdoor recreation for special populations; the Department's implementation plan for the handicappers consumer team's and Governor's recommendations; and a recommended action plan for the DNR to follow in meeting the recreation needs of the state's special populations.

National Wild and Scenic Rivers

On November 10, 1978, President Carter officially designated (through P.L. 95-625) 66.4 miles of the Pere Marquette River mainstream as part of the National Wild and Scenic Rivers System. The system itself was created by P.L. 90-542, with additional rivers designated periodically by law. The Pere Marquette action was based on recommendations made in an extensive study by the United States Forest Service.

In addition, the AuSable and Manistee Rivers, including the tributary Pine River, are being studied by the Forest Service as directed by Congress in 1975. The final study reports for these rivers must be submitted to Congress by October 2, 1979.

The federal Heritage Conservation and Recreation Service has completed a preliminary inventory of potential candidates for the National Wild and Scenic Rivers System in Michigan as part of a nationwide inventory. The inventory identifies six streams or stream segments, representing 343 miles, as high-potential candidates for the national system, and an additional 33 streams or stream segments (1,507 miles) as rivers not as outstanding, but worthy of some form of protection. No specific recommendations regarding these rivers have been made to date. A second phase of the inventory has been initiated to identify rivers and river segments significant for their recreational, cultural, and urban values.

Historic Preservation

Michigan's historic resources have great scientific, educational, cultural and recreation values. Appreciation of these values has grown greatly in recent years. This state's historic preservation program is the responsibility of the Michigan History Division of the Michigan Department of State. The division works to preserve, and to assist others in preserving, Michigan's historic resources. The staff cooperates closely with the DNR Parks Division.

The History Division receives financial and technical assistance from the federal Heritage Conservation and Recreation Service, which administers the Historic Preservation Fund. This fund provides grants to assist both components of the historic preservation program, which are survey and planning along with acquisition and development.

The survey and planning component has the following elements:

- *program management and planning*: internal management, staff development, program planning;
- *public participation and education*: information exchange with agencies, organizations and individuals;
- *survey*: grants and assistance to communities, universities and others to conduct archaeological and historical surveys and develop preservation plans; development of data systems;
- *registration*: nomination of sites for state and national historic registers;
- *review and compliance*: monitoring of development proposals to ensure that archaeological and historic resources are not lost or damaged;
- *legislation*: development and monitoring of legislation to assess impacts on historic preservation;
- *technical assistance*: assistance to agencies, firms and organizations involved in historic preservation.

The acquisition and development component involves grants to public agencies, organizations and individuals to purchase and/or restore properties listed in the National Register of Historic Places. Grants assisted 13 projects in fiscal year 1978, and the History Division hopes to assist 18 projects per year over the next few years. The grants are from the Historic Preservation Fund and cover up to 50 percent of project cost.

MICHIGAN'S HISTORIC PRESERVATION PROGRAM, 1978-79

<u>Program Component</u>	<u>Federal Funds</u>	<u>Other Funds¹</u>	<u>Total</u>
Survey and Planning	\$ 461,801	\$ 461,801	\$ 923,602
Acquisition and Development	596,199	1,428,417	2,024,616
Total	\$1,058,000	\$1,890,218	\$2,948,218

¹ Includes matching funds provided by grant recipients.

TABLE 8



michigan's recreation resources

3



Recreation resources include many things. Types and amounts of public land, water and facilities are important factors. Recreation resources also include:

- the quality of public agency programs and management;
- commercial and private nonprofit facilities and programs;
- private open space and farmland, swimming pools and waterfront property;
- streets, roads, sidewalks and trails;
- access to lakes and streams;
- fish and wildlife;
- climate, topography, vegetation and scenery;
- public awareness of recreation resources.

Michigan has a rich variety of natural features. Fertile, flat lake plains in the southeast contrast with rugged and rocky hills in the northwest. Vast swamps in the Eastern Upper Peninsula contrast with rolling farmlands in the Southern Lower Peninsula. Great Lakes shorelines vary from rock cliffs to majestic dunes to sweeping marshes.

Michigan's geology is very much related to the Great Lakes. The Great Lakes basin is a draining glacial pool, and Michigan's two peninsulas are exposed uplands rising out of glacial meltwaters. In geological terms, Michigan's present structure is relatively new.

The two peninsulas of Michigan may be compared to a pair of gently sloping roofs, rising to a slight peak down the center of each peninsula. They are relatively old roofs

and provide Michigan with a pair of "continental divides", with rivers running north or south off the Upper Peninsula and east or west off the Lower Peninsula.

The landscape is seldom sheer and abrupt, but rather gentle and engaging with rolling hills, plains and sand dunes. Drift covered pre-cambrian rock has created some "mountains" such as the Porcupine and Huron Mountains and the spine of the Keweenaw Peninsula.

There are a variety of soil conditions. In many areas of the state, soils change abruptly from clay to loam to sand to a gravelly mixture of all three. Forest cover is comparatively young and crudely structured, conforming to soil types. But human activities such as land clearing, logging and fires have drastically changed the original forest.

Water Resources

Perhaps the greatest recreational resources of Michigan are its waters.

The Great Lakes

Michigan's borders run through lakes Superior, Michigan, Huron and Erie, plus the connecting St. Marys, St. Clair and Detroit rivers and Lake St. Clair (Figure 3).

Three-fourths of the total United States' water area of the Great Lakes is within Michigan's jurisdiction. With 3,288 statute miles of shoreline on the lakes, connecting waters and islands, nearly one-third of the total Great Lakes shoreline belongs to Michigan. Michigan's sovereignty over 38,575 square miles of the Great Lakes surface waters, plus its 57,022 square miles of land area, make it the eleventh largest state.

Less than 20 percent of Michigan's Great Lakes shoreline is in public ownership. About 52 percent of this is state owned, 41 percent federal and 7 percent under local units of government. Most of the public owned shoreline is in the northern part of the state, remote from major population centers—62 percent is in the Upper Peninsula, 24 percent in the northern half of the Lower Peninsula and 14 percent in the southern half. Twelve percent of Michigan's Great Lakes shoreline is "sand dune", 15 percent "wetlands" while the remaining 73 percent exists as various land types ranging from "low plains" to "high nonerodible bluffs".¹ Virtually every mile of shoreline has recreation value, to say nothing of the value of the lakes themselves.

Inland Lakes

Michigan's inland waters may afford even greater recreation opportunities than the Great Lakes. There are some 7,500 lakes over five acres, and the levels of about 250 of

¹ **A Plan For Michigan's Shorelands.** Michigan Department of Natural Resources, August, 1973.

these have been raised and controlled with dams. In addition, there are some 5,000 artificial lakes, ponds and reservoirs under five acres providing water for recreation.

Rivers and Streams

Michigan has approximately 36,000 miles of rivers and streams. Since no point in Michigan is more than 80 miles from one of the Great Lakes, our rivers and streams are

relatively short. Yet they offer ample opportunities for boating, fishing, swimming and uses of adjacent lands. In some urban and industrial areas, however, water pollution continues to limit recreation. In many Northern Lower Peninsula rivers competition among anglers, canoeists and landowners has caused problems. The importance of streams and rivers in providing recreation increased substantially with the advent of the anadromous fisheries program.

MICHIGAN WATER RESOURCES



Note: Cities shown are State Metropolitan Statistical Areas (SMSA's).

FIGURE 3

Climate

Michigan has a diverse climate. The weather plays an important role in creating or discouraging a variety of outdoor recreation experiences. Classified as a temperate, sub-humid climate, Michigan averages about 32 inches of rainfall annually. The Upper Peninsula usually receives about 100 inches of snow, although three times that amount is not unheard of in severe winters. Michigan's Lower Peninsula averages around 45 inches of snow annually.

The "summer" outdoor recreation season may last five or six months in the southern part of the state and decreases northward. The cooler northern air draws thousands of people from Southern Michigan and from out-of-state during the summer. The lure of fall, winter and spring outdoor recreation throughout the state also attracts many visitors.

Flora and Fauna

Southern Michigan is largely within an oak-hickory forest region, with some beech-maple and lowland elm-ash areas. Forest stands occur largely on woodlots, stream borders, steep slopes and wetlands that were never "put to the plow" or logged. Northern Michigan is mostly a maple-beech-yellow birch forest with significant tracts of pine (red, jack and white) and important mixtures of swamp conifers and hardwoods. Aspen is the most common species in much of the cut-over forests. Borders between these broad forest types are frequently irregular, and often overlap and change with variation in climate and types of soil.

Many kinds of wildlife live in and on Michigan forests, wetlands and farmlands. Deer, rabbits, grouse and fox squirrels are creatures of the forest edge, while black bears, wild turkeys and gray squirrels prefer more mature forests. Ducks, geese and other waterfowl take advantage of Great Lakes shoreline and inland lake marshes. Pheasant, quail, squirrels and cottontail rabbits inhabit Southern Michigan agricultural lands. Over 300 species of songbirds, hawks and owls are either permanent residents or present during migrations in the spring and fall.

Michigan's fisheries are equally diverse, yielding nearly all the freshwater species of North America. In addition, several exotic species help provide anglers with a good range of fishing opportunities. The brook trout is native to Michigan, but both the brown and rainbow trout, and three salmon species were transplanted. This native and "man-made" fishery provides tremendous recreation and attracts thousands of tourists.

Federal Recreation Resources

Michigan's federally owned areas are of major recreation significance. These areas complement state and local units. Federal lands are administered by three agencies;

the Forest Service, National Park Service and Fish and Wildlife Service (Figure 4).

National Forests

Administered by the Forest Service, national forests were originally (1905) set aside to protect water supplies and produce timber. In 1915 recreation use was authorized on these lands. In 1960 they were dedicated to multiple use encompassing outdoor recreation, range, timber, watershed, wildlife and fish management. In Michigan, the Huron-Manistee, Hiawatha and Ottawa National Forests contain 2,695,400 acres for public enjoyment. Recreation opportunities include picnicking, camping, hiking, fishing, boating, hunting, skiing and snowmobiling.

Located in Northern Michigan, the Huron-Manistee National Forest was originally established as two separate forests, but was combined in 1945 to total 918,300 acres. Both forests contain areas of special interest. The Huron unit includes the AuSable River, a popular canoe and trout fishing stream, the Tuttle Marsh and the Kirtland's Warbler Management Area which has been established for this rare songbird. The Manistee unit contains the famous Manistee, Pine and Pere Marquette rivers.

The Hiawatha National Forest, with 865,100 acres, has two separate units located in the eastern and central portions of the Upper Peninsula. The Ottawa National Forest is in the Western Upper Peninsula. Many areas within its 924,000 acres contain rugged relief, scenic overlooks, deep valleys and waterfalls. Of particular interest is the Sylvania Recreation Area, an 18,000-acre tract of lakes and old forest on the Wisconsin border. Controlled access and development has made this one of the few remaining primitive areas in the Midwest.

National Park and Lakeshores

One national park and two national lakeshores are administered by the National Park Service in Michigan. All are in the northern part of the state and offer outstanding and unique natural and scenic features. Isle Royale National Park is a 133,800-acre wilderness, including 200 small islands surrounding this largest island in Lake Superior. Isle Royale, accessible only by boat or sea-plane, lies 56 miles from the Keweenaw Peninsula. The forested island is distinguished for its wilderness character, the timber wolf/moose ecological relationship and pre-columbian copper mines. The park was established to conserve Isle Royale's many scenic, natural and historic wonders for future generations.

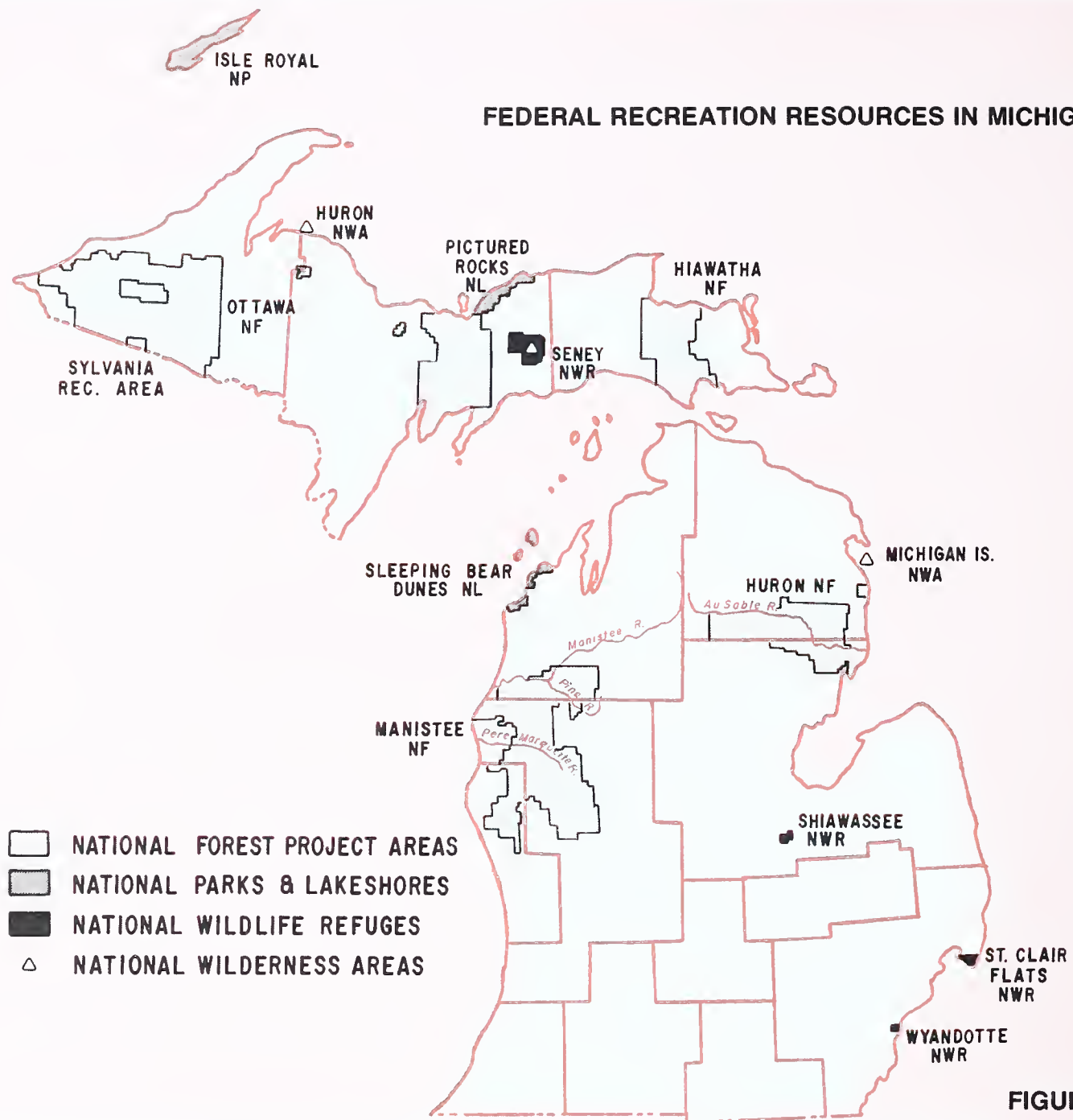


FIGURE 4

Pictured Rocks National Lakeshore was established in 1966 along 35 miles of Lake Superior shoreline between Munising and Grand Marais. This lakeshore contains 71,000 acres, of which more than half remains in private ownership. The area is uniquely scenic, with multicolored sandstone cliffs, broad sand and rock beaches, sand bars and dunes, waterfalls, inland lakes and miles of trails. Although major recreation development has not taken place, there is considerable public use.

Sleeping Bear Dunes National Lakeshore became a reality in 1970. This national lakeshore has 64 miles of Lake Michigan shoreline between Frankfort and Leland, including North and South Manitou Islands. It is one of the finest natural scenic areas on the Great Lakes comprising about 71,000 acres with approximately 20,000 acres on the two islands. Approximately 27,000 acres have been pur-

chased to date, which provide numerous recreation opportunities.

National Wildlife Refuges

In Michigan, the Fish and Wildlife Service administers almost 112,000 acres, primarily for waterfowl breeding grounds. Visitors to these areas have prompted development of picnic areas, trails and a visitor center.

The Seney National Wildlife Refuge is 97,900 acres of upland and marsh in the Upper Peninsula. Interlaced by an intricate system of dams, dikes and ditches, it serves as a breeding ground for waterfowl and other wildlife species. The area attracts a number of people coming to hunt, fish, picnic and camp; but primarily to enjoy the area through auto tours, hiking and nature interpretation. The Shiawassee National Wildlife Refuge and adjoining

Shiawassee River State Game Area provide major resting and feeding areas for waterfowl on the Mississippi Flyway. This area provides an opportunity to view spectacular gatherings of waterfowl. The state area provides 8,400 acres for waterfowl hunting, while the federal area provides almost 9,000 acres for undisturbed resting and feeding. Michigan's other national wildlife refuges are Lake St. Clair, Wyandotte, Huron Islands and Michigan Islands.

National Wilderness Areas

In 1970, portions of national wildlife refuges in Michigan were designated as wilderness areas. These include certain lands in the Seney Refuge and all of the Huron Islands and Michigan Islands refuges. The Seney wilderness area consists of about 25,000 acres, while Huron Islands and Michigan Islands contain about 160 acres. In 1976, 131,880 acres of Isle Royale National Park, including Passage Island and the Gull Islands, were designated as wilderness areas. These designated areas, in conjunction with Michigan's wilderness and natural areas, create special environments for study and enjoyment.

State Recreation Resources in Michigan

State owned lands provide a variety of recreation opportunities for Michigan residents and out-of-state visitors. The Department of Natural Resources administers state owned recreation resources, Figure 5.

State Forests

Michigan's state forests include about 3,761,000 acres in Northern Michigan, and are a major recreation resource. The state forests are managed under a multiple-use concept to: (1) benefit the environment with special concern for soil, water, air and aesthetics; (2) provide outdoor recreation primarily for hunting, fishing, camping, hiking, sightseeing and snowmobiling; and (3) provide commercial forest products. The state forests are 80 percent tax-reverted land and 20 percent purchased land acquired mostly with deer hunting license fees. These forests are gradually contributing a larger share of the state's wood products. State forest recreation facilities are mainly rustic campgrounds, water access sites, boat landings and trails.

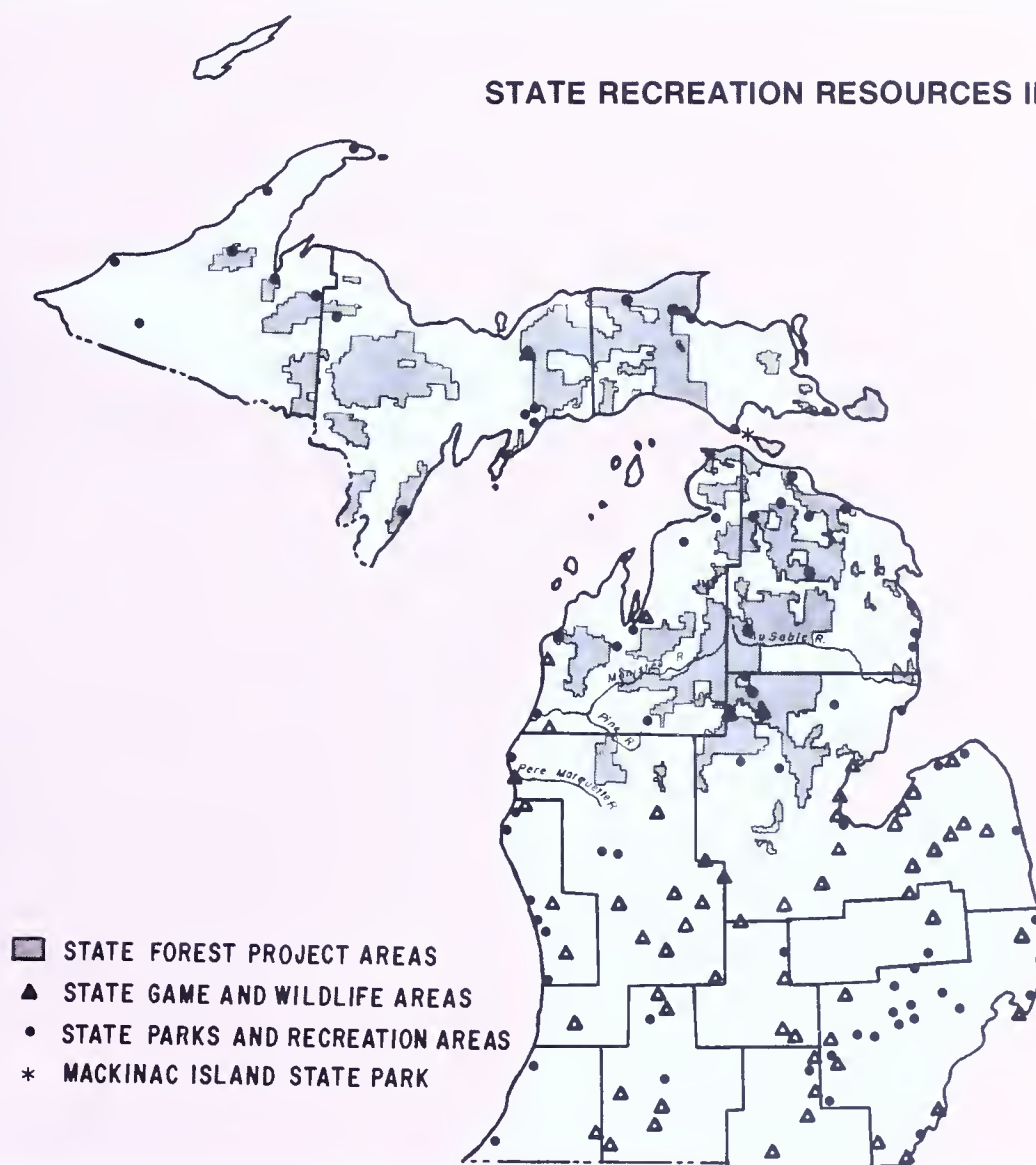


FIGURE 5

State Game and Wildlife Areas

State game and wildlife areas represent lands developed to benefit wildlife and provide hunting. These lands have been purchased with hunting license fees and federal Pittman-Robertson funds. These funds have contributed to the purchase of projects in Southern Michigan totaling almost 262,000 acres.

Michigan's many wildlife species provide invaluable recreation opportunity. Their management is the responsibility of the DNR Wildlife Division. This division manages state game and wildlife areas and the wildlife in state forests, and works with private landowners to improve game habitat. Special management areas are designated for endangered species, such as the Kirtland's warbler whose breeding grounds are Northern Lower Michigan jackpine stands.

State Parks and Recreation Areas

Michigan state parks and recreation areas are fundamental to recreation. Their significance lies in preservation of open space, scenic beauty, natural areas and wilderness. While providing important daytime recreation activities, they also serve as a base for camping travelers who provide their own "room and board" while recreating in Michigan. There are 92 state parks and recreation areas administered by the DNR Parks Division. The parks range from 32 acres to 58,000 acres, and are enhanced by some of the best scenic terrain, varied forests, attractive lakes, sandy beaches, streams and river frontage in Michigan.

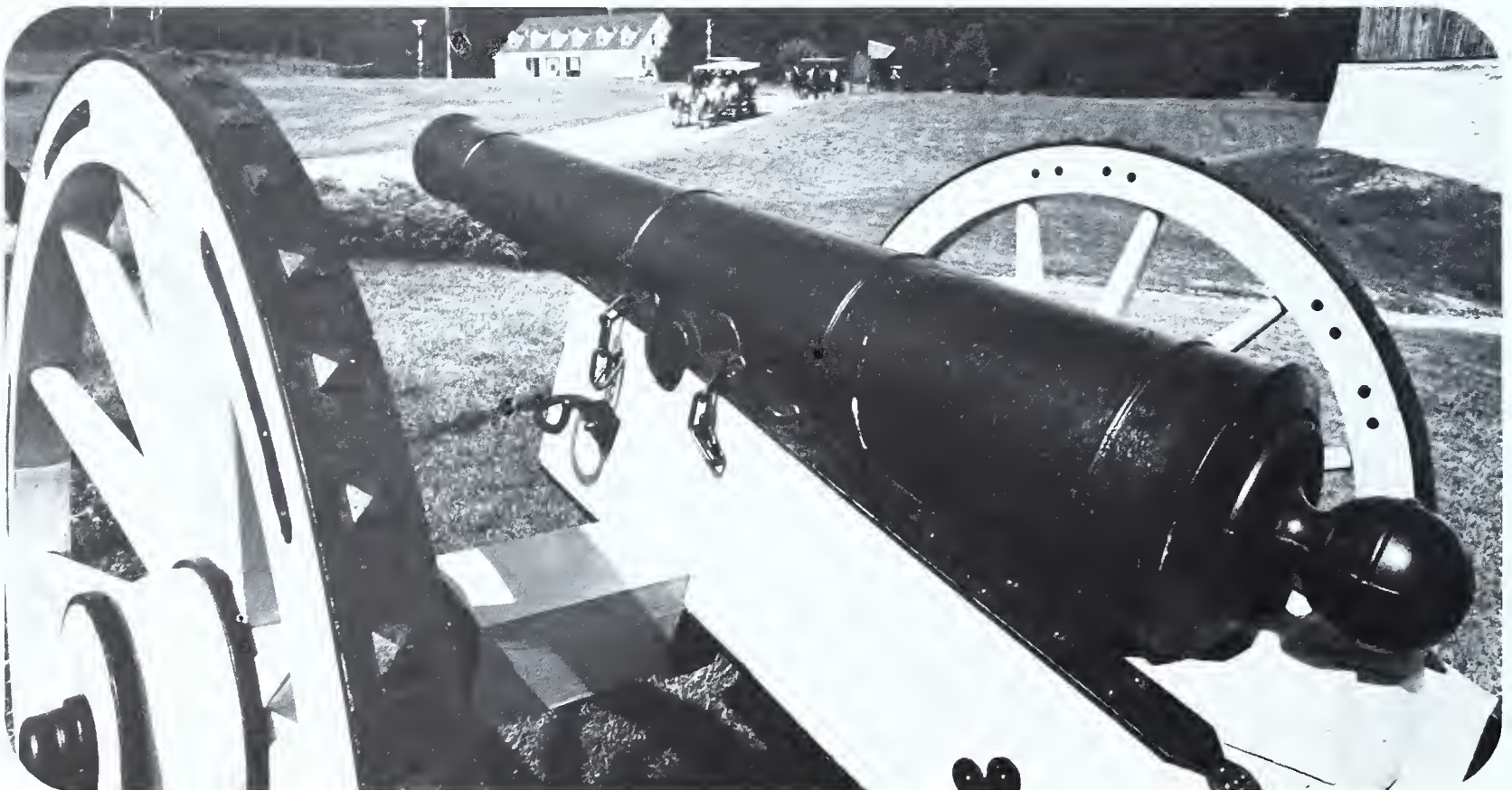
Many of Michigan's state parks are located near bodies of water—either Great Lakes or inland waterways. Thirty-seven parks are on the Great Lakes, and 56 on inland lakes and streams. A well-balanced park system requires use of a broad range of resources, from developed sites providing diversified opportunities for large groups, to undisturbed "primitive" areas providing enjoyment for limited visitors.

The Mackinac Island State Park Commission is a key agency in the state's park system. The Commission operates the 1,748-acre Mackinac Island State Park on Mackinac Island and the 25-acre Michilimackinac State Park at Mackinaw City.

Fisheries and Water Access Facilities

The Waterways Division of the DNR is responsible for development and management of public marinas, launching and public access sites. The Waterways Commission is an advisory body to the DNR in its administration of these programs, funded principally by marine fuel tax and boat registration fees. Facilities developed under this program have an important role in water-related recreation activities such as boating, canoeing, fishing and camping.

The DNR Fisheries Division manages fisheries resources. The Department's role in fisheries management involves more than 7,500 inland lakes, some 36,000 miles of streams, and 39,000 square miles of waters on the Great Lakes. Sport fishing is big business in Michigan. Introduction of coho and chinook salmon, along with effective management of lake trout and steelhead, have produced a renowned fishery.



Local Recreation Resources

Local Government Lands

Lands administered by local governments receive especially intensive recreation use. Michigan's cities, townships, counties and the Huron-Clinton Metropolitan Park Authority together administer 91,000 acres. Because they are typically located close to where people live, these lands are extremely important in meeting public recreation needs. Local recreation lands and facilities accommodate large numbers of people and are the main providers of public recreation. Table 9 summarizes public land in Michigan under federal, state and local jurisdictions (No. 10, Appendix A).

School-Community Recreation

The education system influences recreation in many ways. It impacts the skills, insights, appreciation and expectations which the individual draws upon in his personal, family and community circumstances throughout life. Specific skills, talents and preferences are developed as a result of physical, cultural and science curricula. Schools themselves are physical plants where recreation occurs. Frequently the public school system is the main community recreation provider, and the recent emergence of community school programs has expanded and extended recreation opportunities to a wider population. An everchanging world imposes the constant need for revitalizing the educational experience in light of continuously emerging demands. Work, and leisure have acquired new relationships significant in defining the quality of life, and education is expected to help mesh them into integrated and meaningful lifelong interests. Education itself has recently been redefined formally as a lifelong program. Although enrollment in elementary and secondary schools is declining, the expectation for enrollment in higher education, at least in community two-year institu-

tions, is continuing to increase. Education for the handicapped and vocational education have also experienced dramatic increases.

MICHIGAN PUBLIC RECREATION LAND BY AGENCY

<u>Agency</u>	<u>Acres</u>	<u>Totals</u>
Federal¹		
National Forests	2,695,396	—
National Parks	255,648	—
National Wildlife Refuges	111,604	—
Subtotal		3,062,648
State²		
State Forests	3,761,021	—
State Parks	220,967	—
State Game Areas	261,884	—
State Water Access Sites	30,729	—
Subtotal		4,274,601
Local³		
County	29,127	—
Township	4,815	—
Municipal	34,279	—
Regional (HCMA)	22,656	—
Subtotal		90,877
Total		7,428,126

¹ U. S. Forest Service, U. S. Fish and Wildlife Service, and National Park Service, 1977.

² Michigan Department of Natural Resources, Lands Division, 1976.

³ Michigan Department of Natural Resources. Recreation Services Division, 1977, Local Government Survey.

TABLE 9



Private Recreation Resources

Private enterprise makes a vital contribution in providing public recreation. The private sector provides specialized and luxury services which go far beyond public agency responsibilities.

Private Campgrounds

After a decade of rapid private campground growth, these campgrounds account for about 50,000 campsites or 63 percent of all campsites in Michigan.

Recreation on Farmlands

Total acreage of farmland in Michigan is slowly decreasing as land is converted to nonfarm uses. More owners of both farmland and nonfarm open land are posting their land against use by the public, and development of rural lands has resulted in their closure to hunting.

Despite these constraints, approximately 72,000 privately owned farms, covering 11.4 million acres, offer potential for recreation such as hunting deer, pheasants, rabbits and other small game. Much of this farmland is in populous Southern Michigan, thus ideally located for meeting greater recreation needs.

In 1966 the U. S. Department of Agriculture, under the Cropland Adjustment Program, offered five- and ten-year contracts to farmers for the diversion of agricultural land from crop production and paid them to allow use of their lands for hunting, fishing, trapping and hiking. This program was terminated in 1976. That year, the DNR initiated its Hunter Access Program, wherein farmland was made available for hunting through a lease arrangement between the farmer and the Department, paid for by the hunter. In 1978 106,000 acres were leased by the State under this program.

Some farms provide recreation such as pond fishing and fruit picking, for a fee. But, in terms of number of enterprises or volume of recreation provided, recreation as a source of supplemental farm income is relatively insignificant. There has been some transition of farmland to commercial or public recreation uses such as golf courses, campgrounds, parks and hunting preserves. However, these conversions typically occur on small portions of lands no longer in agriculture.

Hunting Preserves

Private shooting or hunting preserves were made possible by Act 134, P.A. 1957. Basically, the law provides that pheasants, bobwhite quail, Hungarian partridges, mallard ducks and several exotic game birds can be reared and released for hunting. Release and hunting is permitted from August 15 to April 30, thus increasing the hunting opportunity. The number of shooting preserves has declined to 65 over the past five years, with 21 open to the public.

Shooting Ranges

In Michigan some 465 shooting ranges provide for competitive shooting, hunter safety training and target practice. These include archery, trap, skeet, rifle and pistol ranges, mostly owned and operated by sportsmen's and conservation clubs. Range use is encouraged in the DNR Hunter Safety Program, through which about 376,000 youths have been trained in firearms and hunting safety since 1970.

Commercial Land

Paper and mining companies own much land in the Upper Peninsula. The Commercial Forest Reserve Act, Act 94, P. A. 1925, was established to encourage timber production on private forest lands having commercial forest potential. Lands listed under the act receive property tax concessions. In partial recognition of these concessions, the law requires that these lands be made available for hunting and fishing. More than 1.25 million acres, most located in the Upper Peninsula, are listed under the act.

Several million additional acres of Upper Peninsula commercial forest land are also open to such use with owner permission. In the Northern Lower Peninsula, however, most commercial land holdings were broken into small ownerships shortly after the lumbering era, leaving a lesser amount of land open to public use. Also, large areas were posted against public use by private hunting clubs from 20 to 50 years ago, and many retain this status. In more recent years, exclusion of the public has been accelerated by the increasing use of forest land for private recreation and residential development.

Public Utility Companies

These companies control sizeable water impoundments and land areas along many Michigan streams, previously acquired as impoundment sites, but not so used. Major portions of these waters and lands are open to the public. In many respects the utilities are willing cooperators with federal, state and local agencies in meeting recreation needs. For example, an agreement between the Wisconsin-Michigan Power Company and the DNR provides recreational use of the Menominee River watershed in the Upper Peninsula. Furthermore, holdings of Consumers Power Company in the Manistee and Au Sable watersheds are significant because of their high recreation and natural resource value and proximity to the population centers of Southern Michigan. Newaygo State Park has been developed through a long-term lease arrangement with Consumers Power.

Downhill Skiing Areas

Fifty-eight winter sports areas cater to downhill or Alpine skiing in Michigan. Many also offer night skiing, food and lodging facilities, entertainment, tobogganing, snowmobiling and cross-country skiing.

Youth Camps

Private and organizational camps provide recreation opportunities to young people on a day or overnight basis. These camps offer a variety of valuable outdoor recreation experiences to many young people from urban environments.

Boat Liveries and Charter Boats

Nearly 17,000 boats and canoes are available for hire or charter in Michigan. Most rental vessels are located in Northern Lower Michigan. Charter sport fishing boats are located in all major ports along the Lake Michigan and Lake Huron shorelines.

Fee Fishing

Privately owned fee fishing enterprises provide supplemental fishing opportunities. Most owners are game fish breeders who offer fee fishing as a secondary income.

Snowmobile Leases on Private Land

In 1972, the DNR began leasing private lands in Southern Michigan for snowmobiling. By 1978, 127 miles of trail were available for public use from this program. Under the leasing agreement, the Department, acting through private snowmobile organizations, pays the landowner \$300 per mile of trail.

In addition to these public and private opportunities, there are numerous quasi-public facilities provided by the YMCA and similar associations. These groups have an

impressive list of facilities and services available to members and often to nonmembers. Also, there are thousands of social-entertainment attractions provided by the private sector that represent unlimited recreation opportunities.

Among Michigan residents in 1976, commercial establishments provided for the greatest share of total recreation participation—23 percent. Local governments and public schools provided 22 percent, and individual private facilities accounted for 21 percent. By comparison only four percent of all recreation activity was attributed to state or federal sites.

Recreation Resources by Region

This section discusses key indicators for recreation policy and priorities. It also points out deficiencies in recreation land, facilities and opportunities at the regional level.

Public Recreation Land by Region

Figure 6 shows the distribution of public recreation land in Michigan by planning region. This includes all public land administered for recreation purposes, though recreation may not be its sole or even primary purpose. This category includes all federal, state and local parks, state and national forest lands, federal wildlife refuges and public water access sites. The figures show that most public recreation land is in Northern Michigan (Regions 7C, 8B, 9 through 13). Region 12 alone has 22.2 percent of the entire 7,368,000 acres of public recreation land. Regions 1A, 2, 4, 5 and 6, by comparison, contain only 1.1 percent of that total.

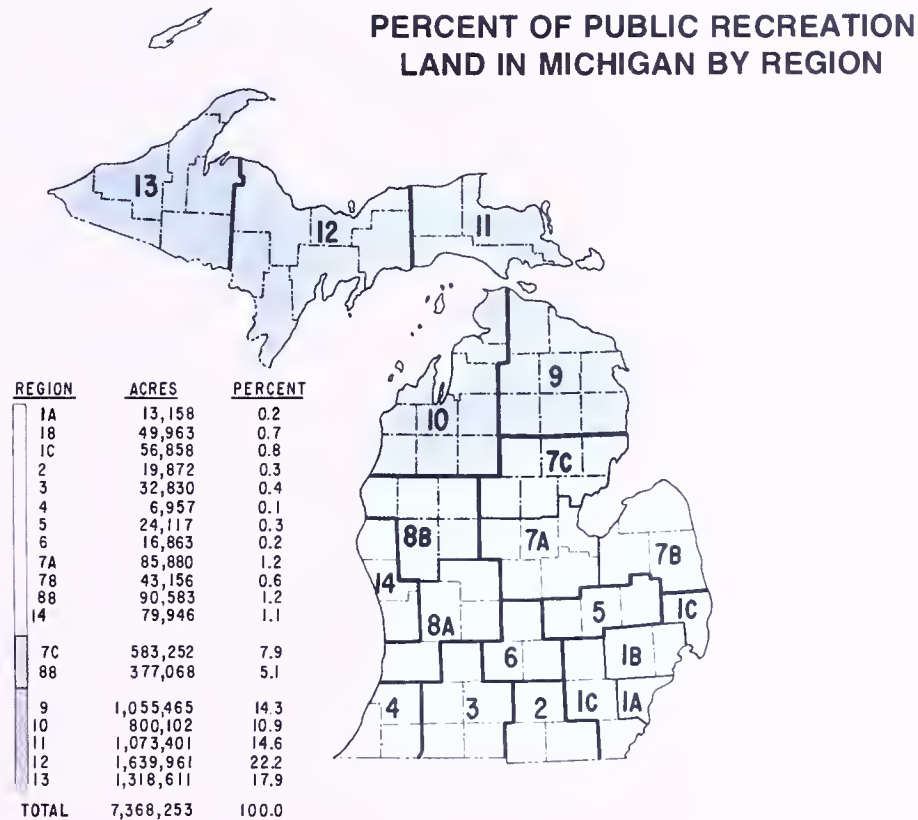


FIGURE 6

Table 10 indicates public recreation land available per 1,000 residents by planning region and jurisdiction. Region 1 has the lowest acreage per capita in public ownership. Sub-Region 1A (Wayne County) has a remarkably low acreage total. Generally, Southeastern (Region 1) and Southwestern Michigan (Region 4) have much less public recreation land per capita than the rest of the state. Great differences also exist among regions in the amount of federal and state recreation land per capita. The local government distribution is more uniform. Most state and federal recreation land is forest land.

MICHIGAN PUBLIC RECREATION LAND BY AGENCY AND REGION

Planning Region	Acres per 1000 Residents			
	Total	Federal ¹	State ²	Local Government ³
1	25.31	0.95	15.60	8.76
A	5.20	0.12	0.48	4.60
B	30.66	—	17.19	13.47
C	97.82	7.23	76.94	13.65
2	72.79	—	64.93	7.86
3	69.41	—	65.84	3.57
4	25.12	—	21.73	3.39
5	41.80	—	19.72	22.08
6	42.37	—	33.30	9.07
7	962.55	177.56	775.95	9.05
A	177.22	18.28	148.52	10.43
B	366.97	—	357.34	9.63
C	4,232.60	889.22	3,339.67	3.72
8	669.03	401.04	255.59	12.40
A	154.53	2.73	139.98	11.81
B	3,342.80	2,470.98	856.35	15.48
9	9,683.17	2,716.58	6,952.40	14.18
10	4,373.34	1,011.26	3,271.49	26.77
11	19,877.80	6,894.06	12,974.65	9.09
12	9,317.96	3,593.61	5,707.78	16.57
13	14,178.61	11,179.14	2,988.06	11.41
14	251.40	191.78	53.24	6.13
State Average	808.81	329.61	469.22	9.98

¹ U.S. Forest Service, U.S. Fish and Wildlife Service and National Park Service; 1977.

² Michigan Department of Natural Resources, Lands Division; 1976.

³ Local Government Survey; Michigan Department of Natural Resources, Recreation Services Division; 1977.

⁴ Population estimates for 1975, Michigan Department of Management and Budget.

TABLE 10

Public Park Land by Region

The acreage of public park land per 1,000 residents in each region is shown in Table 11. Public park land differs from the total public recreation land category because state and national forest lands, state access sites, state game areas, and national wildlife refuges are excluded. Under the "Federal" category, Michigan's two national lakeshores are included as park land, accounting for the total federal park land in Regions 10 and 12. Northern Michigan regions have greater per capita amounts of land in public parks than the southern regions. Regions 1A, 4, 6, 7A and 8A have the lowest acreage of public park land per capita in the state.

MICHIGAN PUBLIC PARK LAND BY AGENCY AND REGION

Planning Region	Acres per 1000 Residents			
	Total	Federal ¹	State ²	Local Government ³
1	20.32	—	11.56	8.76
A	4.97	—	0.37	4.60
B	30.52	—	17.05	13.47
C	58.51	—	44.86	13.65
2	53.51	—	45.65	7.86
3	20.40	—	16.84	3.57
4	11.15	—	7.77	3.39
5	28.42	—	6.35	22.08
6	15.90	—	6.83	9.07
7	19.33	—	10.28	9.05
A	11.13	—	0.71	10.43
B	26.25	—	16.62	9.63
C	42.23	—	38.51	3.72
8	23.36	—	10.95	12.40
A	18.43	—	6.62	11.81
B	48.98	—	33.50	15.48
9	139.96	—	125.78	14.18
10	235.99	145.40	63.83	26.77
11	417.13	—	408.04	9.09
12	238.95	200.79	21.60	16.57
13	2,153.09	1,439.12	702.56	11.41
14	23.07	—	16.94	6.13
State Average	55.72	21.49	24.26	9.98

¹ National Park Service; 1977.

² Michigan Department of Natural Resources, Lands Division; 1976.

³ Local Government Survey; Michigan Department of Natural Resources, Recreation Services Division; 1977.

TABLE 11

Park Operation Expenditures by Region

While the amount of public recreation or park land is one measure of recreation opportunity, the amount of money spent by public agencies for recreation should be considered. Expenditures can indicate the intensity of recreation in the more populous parts of the state where there is less public land. A comparison of regional park operational

expenditures shows that Michigan's northern regions often have higher levels of expenditures per resident. No uniformity in expenditures exists between townships, cities, counties and the state within any region. Undoubtedly, the imbalance in operation expenditures is influenced by certain fixed costs. However, significant differences in per capita operation expenditures exist among regions and cannot be ignored (Table 12).

MICHIGAN PUBLIC RECREATION OPERATION EXPENDITURES BY REGION, 1975-76
Expenditure Per Resident

Region	Total	State Parks ¹	Total Local Governments ²	Counties	Local Governments	
					Townships	Cities
1	\$10.47	\$ 0.61	\$ 9.86	\$1.21	\$2.26	\$10.29
A	9.62	0.03	9.58	1.14	4.30	8.73
B	9.64	0.82	8.82	1.36	1.01	10.13
C	10.78	2.48	8.30	1.05	1.55	14.40
2	6.22	0.91	5.31	0.04	0.17	12.91
3	6.11	0.75	5.36	1.12	0.71	7.31
4	5.62	1.56	3.96	³	1.27	9.15
5	12.56	0.40	12.16	3.14	2.98	14.43
6	13.16	0.25	12.91	0.43	1.65	19.78
7	6.23	1.63	4.60	1.30	1.60	5.69
A	4.84	0.42	4.44	1.16	1.73	4.98
B	7.28	2.52	4.76	1.05	1.22	8.57
C	11.19	6.06	5.13	2.79	1.36	5.80
8	8.63	0.63	8.00	2.13	1.48	8.73
A	7.53	0.10	7.43	1.35	0.72	9.00
B	13.80	3.32	10.48	5.77	3.43	6.61
9	19.33	9.67	9.66	0.06	7.97	12.91
10	16.28	5.17	11.11	1.35	3.48	18.41
11	18.74	11.13	7.61	³	7.11	8.31
12	9.11	3.21	5.90	0.81	2.07	7.74
13	14.33	10.21	4.12	0.40	1.77	5.68
14	9.60	2.97	6.63	0.98	1.12	10.00
State						
Average	\$10.44	\$ 1.21	\$ 9.23	\$1.34	\$2.01	\$11.04

¹ Michigan Department of Natural Resources, Parks Division.

² Michigan Department of Natural Resources, Recreation Services Division, 1977, Local Government Survey.

³ Operating budget information not submitted in 1976, Local Government Survey.

TABLE 12

Park Capital Outlay by Region

Table 13 examines recreational capital outlay per resident in each region. Local government capital outlay is based on fiscal year 1976 figures and state parks on an average of three years. As was the case for operational expenditures, there is no uniformity in expenditures either between regions or governments. Municipalities generally spend more than townships and counties. Some northern regions post a higher recreational capital outlay per resident. This may be influenced by the large amount of state and federal lands in these regions.

Water, Camping and Boating Resources by Region

Figure 7 compares water resources by region, showing vast differences relative to population. The Water Resource Index was calculated by: (1) determining each

region's share of the state total for miles of Great Lakes shoreline, acres of inland lake surface, and miles of streams (giving inland lakes a weight of 3.7 and the other two a weight of 1.0); (2) totaling the three figures for each region; (3) dividing that total by the region population; (4) dividing the per capita figure for each region by the statewide per capita average. The 3.7 weight for inland lakes is based on data from the 1976 Michigan recreation survey regarding the amount of recreation activity taking place on the three types of water resources. The index is a measure of present water resource **potential**; it does not consider aesthetics, water quality, or how much of the water resource is accessible to the public.

The average Michigan resident has a water resource index of 1.00. An index of 8.00 means that a region's residents have eight times more water resource **per per-**

MICHIGAN PUBLIC RECREATION CAPITAL OUTLAY EXPENDITURES BY REGION, 1975-76
Expenditure Per Resident

Region	Total	State Parks ¹	Total Local Governments ²	Local Governments		
				Counties	Townships	Cities
1	\$ 7.01	\$0.10	\$ 6.91	\$0.67	\$1.59	\$ 7.44
A	3.42	0.01	3.42	0.41	3.79	2.94
B	8.61	0.16	8.45	1.16	0.21	10.23
C	5.16	0.33	4.83	0.27	0.86	9.20
2	3.72	0.28	3.44	0.09	0.00 ³	8.41
3	5.91	0.17	5.74	0.48	0.83	9.12
4	2.44	0.18	2.26	³	1.90	2.98
5	5.95	0.02	5.93	4.10	0.34	3.18
6	4.67	0.02	4.65	2.04	6.06	0.29
7	15.46	0.95	14.51	1.05	2.05	29.48
A	17.38	0.07	17.31	1.30	2.93	30.34
B	16.40	5.14	11.26	0.49	9.48	30.85
C	1.17	0.04	1.13	0.05	0.12	4.48
8	4.55	0.01	4.54	0.89	1.86	4.80
A	3.99	0.00	3.99	0.80	1.64	4.04
B	7.14	0.04	7.10	1.31	2.43	10.92
9	2.87	0.86	2.01	0.96	1.12	0.84
10	13.75	2.63	11.12	10.14	0.78	1.28
11	2.15	0.07	2.08	³	3.53	0.03
12	3.49	0.04	3.45	1.12	0.90	3.57
13	12.17	1.93	10.24	0.00 ³	7.86	12.63
14	2.56	0.20	2.36	0.36	2.03	1.93
State Average	\$ 6.36	\$0.25	\$ 6.11	\$1.09	\$2.03	\$ 6.61

¹ Michigan Department of Natural Resources, Parks Division. Figures for state parks are an average of three fiscal years.

² Michigan Department of Natural Resources, Recreation Services Division, 1977, Local Government Survey.

³ Operating budget information not submitted in 1976, Local Government Survey.

TABLE 13

MICHIGAN WATER RESOURCES INDEX BY REGION

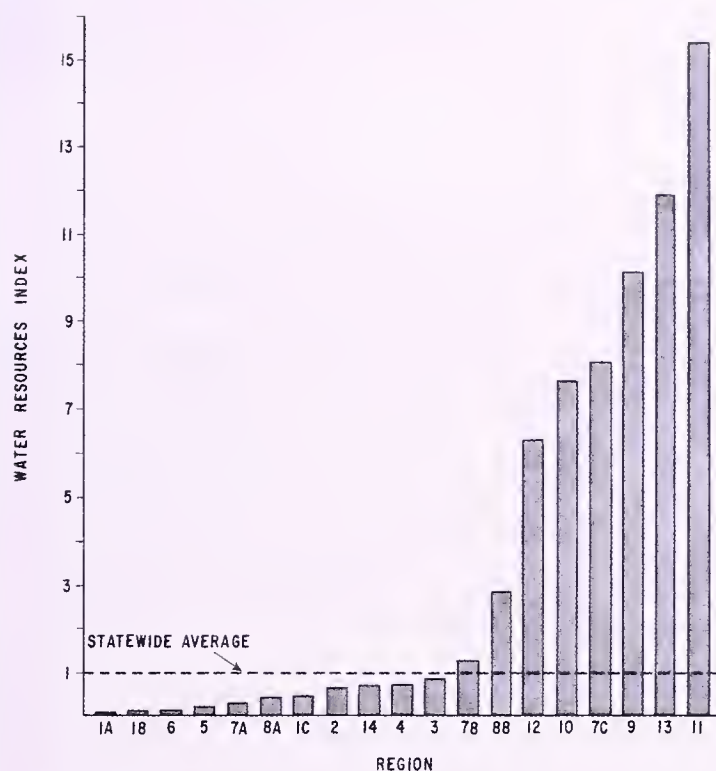


FIGURE 7

son than average. Conversely, an index of 0.50 means one-half the average water resources **per person**.

The regional comparison demonstrates a need to use the limited water resources in highly populated regions as effectively as possible. These waters must be protected from excessive use damage, pollution and filling. Public access and support facilities must be provided to achieve

optimal use of the limited water resources in Southern Michigan.

Table 14 shows recreation opportunities per 1000 residents available in each region for camping and boating. Opportunities, in this sense, mean the daily capacity for recreation use. Camping opportunity, for example, is measured by number of campsites, whereas boating opportunity is measured by the number of vehicles that can be parked at launching sites. Table 14 also includes acres and percent of inland lakes with public access.

Distribution of outdoor facilities is similar to distribution of the natural resource base. That is, a greater per capita share of facilities are located in the northern, less populous regions (7C, 8B, 9, 10 and 11). Table 14 indicates the number of facilities per 1,000 residents is lowest in the most populous regions (1A, 1B, 5, 6, 7A and 8A). These figures are not surprising. However, if the goal is to increase recreation opportunities where people live, these figures become important.

Another important factor in determining water-based recreation opportunities is the amount of water accessible to the public. Table 14 contains the number of acres of inland lake surface water accessible to the public in each region per 1,000 residents, and the percent of total inland lake surface water acres with public access. Public access, in this sense, means all public parks, boat launches, campgrounds or other access points on a lake. These figures show that the least opportunities are in populous regions and regions with few inland lakes (e.g. Regions 1A, 1B, 6, 7A and 7B). In some regions there is very little accessible water acreage. Heavy private development on inland lakes has negated public access. Regions with the lowest percentages are: 1A, 16 percent; 7B, 20 percent; 6, 25 percent; and 7A, 38 percent.

REGIONAL INVENTORY OF SELECTED MICHIGAN RECREATION OPPORTUNITIES, 1977

Region	Per 1,000 Residents				Acres of Inland Lakes with Public Access ¹	Percent of Inland Lake Acres with Public Access ¹
	Campsites ²	Boat Launch Parking Sites ²	Rental Boats and Canoes ³	Marina-Slips ⁴		
1	1.64	0.69	0.52	3.38	3.81	36
A	0.01	0.21	0.14	2.07	0.00	16
B	2.37	1.08	0.73	3.90	6.48	58
C	6.50	1.65	1.59	7.51	12.06	49
2	20.91	1.56	0.92	—	27.63	46
3	11.94	2.38	2.49	—	50.93	63
4	11.41	3.53	2.35	2.53	33.12	61
5	3.45	0.83	0.68	—	10.55	64
6	2.02	0.26	0.48	—	1.13	25
7	13.43	2.40	0.16	2.65	71.51	54
A	2.11	0.83	0.32	2.60	4.76	38
B	23.27	2.18	1.34	6.89	1.00	20
C	53.05	9.76	16.40	3.99	454.43	55
8	19.17	4.42	2.85	0.69	45.30	66
A	12.02	1.95	0.79	0.59	18.09	54
B	55.76	14.81	13.35	1.21	184.50	74
9	63.43	14.29	20.87	9.17	850.79	88
10	46.85	13.37	14.11	1.94	647.12	92
11	68.76	13.53	19.17	9.05	543.05	70
12	17.87	10.13	2.30	1.44	176.74	48
13	26.68	13.77	4.32	2.15	643.38	38
14	14.29	2.61	1.76	8.25	44.88	87
State Average	8.62	2.22	1.83	2.96	55.19	70

¹ Michigan Department of Public Health records (1977). *Michigan Outdoor Guide*; (Automobile Club of Michigan, AAA, 1977).

² Michigan Department of Natural Resources. Waterways Division records, 1977.

³ Michigan Department of Natural Resources. Law Enforcement Division records, 1977.

⁴ Michigan Department of Natural Resources. Waterways Division records, 1977.

⁵ Michigan Department of Natural Resources. Land Resource Programs Division records, 1977.

TABLE 14

Local Government Recreation

There have been significant changes in the local recreation system over the past five years. The State Recreation Bond Program stimulated growth in recreation facility development during the early 70's, but that program has ended and no new state program has emerged to replace it. However, the growth of the Land and Water Conservation Fund and Community Development Block Grants has helped to maintain some of the development momentum experienced under the bond program, and the DNR—through its Urban Recreation Program—is emphasizing state facilities closer to populous areas. Despite these efforts, a reliable long-term source of funding is needed.

The prediction of "increased concern and difficulties in the operations of recreation services" made in the **1974 Michigan Recreation Plan** has, to a considerable degree, materialized. Severe local government fiscal problems have prevailed since that plan was prepared. There has been an increased reliance on nonlocal sources of funding to relieve pressure on local government general funds. This objective has often been achieved by juggling nonlocal funds while reducing the local contribution. But growing reliance on nonlocal sources of revenue creates future difficulties when these sources are withdrawn. Thus, the nonlocal funding strategy for recreation provides at best only a short-term solution.

Local Recreation Survey

The local recreation survey is based on a statewide mail survey. The return rate varied from nearly 50 percent at the county and city level (representing 79 percent and 60 percent of the population, respectively), to 12 percent of the townships (representing 23 percent of the population).

Operation Expenditures: Local government recreation systems did not experience significant increases in per capita operation expenditures between 1972 and 1976, and when inflation is considered, services during this period actually decreased (Table 15).

CHANGE IN MICHIGAN LOCAL GOVERNMENT RECREATION OPERATIONS EXPENDITURES, 1972-76

	<u>County</u>	<u>Township</u>	<u>City</u>
1972 Expenditure per person	\$1.16	\$1.68	\$ 9.75
1976 Expenditure per person	1.34	2.01	11.04
Percent Increase, 1972-76	16%	20%	13%
Corrected for 34% Inflation	-18%	-14%	-21%

TABLE 15

Regarding general fund contributions to the recreation operating budget, cities show a decreasing share. The overall increases shown in Table 16 reflect the availability of federal manpower programs. Counties and townships relied more on general funds in 1976 than in 1972, due to increasing voter resistance to approve special millages for revenue (Table 16).

CHANGE IN GENERAL FUND SHARE OF MICHIGAN LOCAL GOVERNMENT RECREATION OPERATIONS BUDGET, 1972-76

	<u>County</u>	<u>Township</u>	<u>City</u>
1972 Expenditure per person	\$0.25	\$1.04	\$8.56
1976 Expenditure per person	0.78	1.55	8.23
Percent Change, 1972-76	212%	49%	-4%

TABLE 16

Employment: Local recreation employment is an indicator of service. There was an overall improvement in the ratio of population to employee due to the increased use of part-time personnel (Table 17).

CHANGE IN MICHIGAN LOCAL GOVERNMENT RECREATION EMPLOYMENT, 1972-76

		<u>Population Per Recreation Employee</u>		<u>Percent Change</u>
		<u>1972</u>	<u>1976</u>	
County employees	full-time	459	538	17%
	part-time	772	1,025	33
Township employees	full-time	134	241	80
	part-time	844	2,906	244
City employees	full-time	3,654	2,762	-24
	part-time	12,803	15,009	17
				—
Total employees	full-time	4,247	3,541	-17%
	part-time	14,419	18,940	31

TABLE 17

Recreation employees fall into three categories: administration, maintenance and activity programs. The activity programs area saw the greatest increase in employment between 1972 and 1976, with increases for all three levels of government, although part-time help accounted for much of the increase. Administration employment decreased.

Sources of Revenue for Operations: Since 1973, several new sources of funding have been introduced which have had significant impact on operation expenditures. The major new sources are Community Development Block Grants and federal manpower programs such as the

Comprehensive Employment Training Act and Emergency Employment Act. State government has also become more active in providing funding for economic recovery projects. Recreation services have benefitted from these new sources which, unfortunately, have also introduced complications. One of the major concerns of local government officials is the long-term reliability of these revenue sources for recreation. Traditionally, general fund dollars have been the staple source of funding. But general fund dollars are slipping as a percentage of overall revenue, and local government has become increasingly dependent upon nonlocal sources of funding to maintain services. This trend of growing reliance on outside sources of funding was noted in the 1974 recreation plan as occurring in capital outlay programs. It has now emerged in operations. Counties are the only local units to show a general reversal of the trend of increased

reliance on nonlocal sources of revenue. Townships show the most dramatic evidence of the trend. Under the guidelines of many federal grant programs, townships are now also eligible to receive these funds. Cities, as expected, show evidence of increased reliance on nonlocal sources of revenue.

General funds remain the major source of support for recreation services. However, federal manpower programs have also become important. When combined, federal grant programs now form the overwhelming portion of the nonlocal sources of revenue. Also significant is the increased reliance on fees and charges for revenue, particularly by cities. Both the increased use of fees and charges and increased contribution of nonlocal revenue sources have decreased the overall proportion of general funds comprising the operations budget (Table 18).

MICHIGAN LOCAL GOVERNMENT RECREATION OPERATIONS FUNDING SOURCES, 1976

	County		Township		City	
	Percent of A or B	Percent of Total	Percent of A or B	Percent of Total	Percent of A or B	Percent of Total
A. <u>Local Sources:</u>						
General Fund	64%	49%	87%	62%	77%	70%
Special Millage	17	13	4	3	2	1
Fees and Charges	17	13	5	4	19	17
Gifts and Donations	0	0	2	1	1	1
Other	2	1	2	1	1	1
Total	100%	76%	100%	71%	100%	90%
B. <u>Non-Local Sources:</u>						
Revenue Sharing	9%	2%	32%	9%	35%	4%
Community Development	0	0	8	2	3	1
Federal Grants	73	18	49	14	57	6
State Grants	16	4	9	3	3	0
Other Grants	0	0	1	0	1	0
Other N-L Source	0	0	1	1	1	0
Total	100%	24%	100%	29%	100%	10%

TABLE 18

Capital Outlay Expenditures: Three categories of capital outlay expenditures were identified: land acquisition, land improvement and new facilities construction. Table 19 shows construction as the most prevalent capital outlay expenditure, with land improvement second. Table 20 indicates a significant portion of the revenue for capital outlay is obtained from nonlocal sources.

Key findings regarding local recreation can be summarized as follows:

1. A decline in the level of operational support for recreation programs.

2. A shift in sources of revenue for operation. Cities and townships are turning to nonlocal sources, while counties have shifted to fees and general funds.
3. A decline in the level of service from full-time employees, with an increasing number of part-time positions funded through federal manpower programs.
4. A general decline in employment in recreation administration, although employment in program activities increased.
5. New facility construction consumes most of capital outlay expenditures, with many capital outlays funded through nonlocal sources.

MICHIGAN LOCAL GOVERNMENT RECREATION CAPITAL OUTLAY EXPENDITURES, 1976

	County		Township		City	
	Per Capita	Percent	Per Capita	Percent	Per Capita	Percent
Land Acquisition	\$0.18	17%	\$0.36	18%	\$1.79	27%
Land Improvements	0.35	32	0.47	23	1.67	25
New Facility Construction	0.56	51	1.20	59	3.17	48
Total	\$1.09	100%	\$2.03	100%	\$6.63	100%

TABLE 19

MICHIGAN LOCAL GOVERNMENT RECREATION CAPITAL OUTLAY FUNDING SOURCES, 1976

	County		Township		City	
	Percent of A or B	Percent of Total	Percent of A or B	Percent of Total	Percent of A or B	Percent of Total
A. Local Sources:						
General Funds	24%	16%	87%	27%	43%	25%
Bond Issue	27	19	0	0	47	27
Special Millage	28	20	0	0	<1	<1
Fees and Charges	2	2	5	1	3	2
Other	19	14	8	3	7	4
Total	100%	71%	100%	31%	100%	58%
B. Non-Local Sources:						
Revenue Sharing	14%	4%	11%	8%	29%	12%
Community Development	0	0	9	6	19	8
L.W.C.F.	34	10	35	24	15	6
Other Federal Grants	1	0	9	6	11	5
State Grants	49	14	28	20	18	8
Other Grants	2	1	5	3	1	<1
Other N-L Sources	0	0	3	2	7	3
Total	100%	29%	100%	69%	100%	42%

TABLE 20

The Role of Schools and Private Agencies in Recreation

Information was obtained on service policies and cooperative arrangements between agencies through an effort by the DNR and the Detroit Joint Recreation Committee. This survey was conducted in 1978 in Region 1, and some survey results proved generally relevant. Questionnaires were sent to public school, private school and church administrators.

Responses from the private school administrators showed they were heavily involved in providing community recreation services. The survey indicated that nearly all private church-related schools permitted recreational use of their facilities by outside groups, and that fees were generally not charged, except for janitorial services. Private schools and related community services are run at low cost and are closely tied to important social needs. Recreation activities are provided for all age groups, but considerable attention is directed toward neighborhood youth. However, declining populations and shifts to lower income families in older areas of cities in conjunction with inflation have made it difficult to maintain services. Financial support from sources such as United Way is critical to program existence.

About one-third of the public school districts conduct their own recreation programs, contributing greatly to community recreation opportunities. Joint sponsorship with the corresponding unit of local government was common. Districts may permit free use of their facilities or charge a fee depending on the type of activity involved. Public school districts frequently provided services ranging from programming to janitorial, varying by district.

Recreation Facility Standards Application to Local Governments

This plan's assessment of recreation needs employed recreation and open space standards developed by the National Recreation and Park Association. The value of standards for recreation facilities must be kept in proper perspective. These standards are intended to serve only as guidelines for facility development and as regional indicators of needs. Differences in age composition, income levels, population density, resources, transportation systems and social values between communities all serve to work against the application of universal recreation and open space standards. Such standards are generally designed for use on a community level, thus their application to region-wide populations is difficult. Furthermore, application of these standards at the regional level assumes that population is centralized, which is not always the case. Population or density criteria are related to service area. For example, while one facility may be needed for every 25,000 people, there is a limit to the geographical size of the area it can serve. However, standards can

show at least one facility of each type in each community, regardless of its population. Nevertheless, standards provide useful guidelines on minimal community recreation needs. Application of standards and facilities comparisons per 1,000 population were based on total regional population estimates for 1975. Information presented in this analysis allows regional comparisons of facilities on a per capita basis, and indicates where the greatest facility needs exist. The facility deficiency figures are not meant to be the final word, but to help in identifying priority regions in conjunction with the rest of the needs analysis included in this plan (Table 21).

**MICHIGAN LOCAL GOVERNMENT
RECREATION
FACILITY STANDARDS**

Number of Residents Per Facility	
Basketball Court	500
Tennis Court	2,000
Softball Field	3,000
Hardball Field	6,000
Local Park (5-25 acres)	10,000
Indoor Swimming Pool	10,000
Outdoor Theater	20,000
Recreation Center (16,000 sq. ft.)	25,000
Golf Course	25,000
Artificial Skating Rink (10,000 sq. ft.)	30,000
Outdoor Swimming Pool	40,000
District Park (26-100 acres)	50,000
Shooting Range (Firearm or Archery)	50,000
Regional Park (101+ acres)	100,000

TABLE 21

Table 3, Appendix B shows the number of existing recreation facilities in each region; the number of residents per facility; and the number of facilities needed to meet the standards listed in Table 21. Information on parks, baseball fields, basketball courts, tennis courts, skating rinks, recreation centers and outdoor theaters was obtained through the local government survey, where all local units were sent recreation facility inventory forms for parks under their administration. Provision was made to include school facilities when the school facility was operated by the local recreation department, but under school jurisdiction. School owned parks made up 18 percent of the total (2,303) parks inventoried. Neighborhood parks are not included. Data on swimming pools, shooting ranges and golf courses were obtained from other inventories.

Examination of Table 3, Appendix B indicates that Region 1A (Wayne County) has the greatest number of deficien-

cies, both in overall and for different types of facilities. The greatest deficiency in number of parks occurs in the local park category, mostly in Southern Michigan. Wayne County is deficient in both the district and regional park categories.

For baseball and softball fields as well as basketball and tennis courts, most deficiencies again were in Southern Michigan, particularly in Region 1 and its sub-regions. However, the Northern Lower and Upper Peninsulas also are deficient in these categories.

The need for indoor swimming pools shows up for all regions except Region 11. The pattern for outdoor pools is more mixed, with Regions 1B and 5 particularly deficient. Most artificial skating rink needs are in Southern Michigan. Recreation center deficiencies exist primarily in Region 1, although Regions 2, 3, 4, 6, and 12 also have significant deficiencies. Outdoor theaters are deficient in every region although Wayne County has by far the greatest deficiency. Surprisingly, shooting ranges and golf courses are deficient only in Wayne County.



**recreation participation
by michigan residents:
present and future**

4



Michigan Resident Recreation in 1976

Effective recreation planning for Michigan requires an understanding of Michigan's recreation system. In this plan, the term "system" means a group of interacting and interdependent elements. What these elements are and how they are related must be known if the recreation system is to be managed toward objectives.

Two basic parts of the recreation system are *people* and *resources*. Resources (land, facilities, programs, personnel, funds, etc.) provide recreation opportunities for people. The Michigan 1976 Recreation Survey has helped to answer these basic questions about the recreation system: who participates to what extent; when, where, and in what activities do they participate; and who provides the sites or areas where they participate?

Survey Method

The survey spanned calendar year 1976. Recreation participation data for the two calendar weeks preceding the interview was obtained from one randomly selected member of the household. Nearly 18,000 interviews were conducted. Respondents were asked to recall any activity during the two-week period fitting the following definition:

For our survey, we are defining recreation very broadly to include anything done mainly for pleasure or enjoyment, **except** inside a private home. This includes cultural and entertainment activities, as well as activities which are social, group, civic, craft and hobby-oriented, as long as they are done mainly for pleasure or enjoyment **outside** a private home.

Participation rates for some recreation activities would have been higher had the respondents been "prompted" by interviewers. However, because of the large number of possible activities under this definition, such prompting was impossible.

Survey estimates are in terms of number of "participations." A participation is defined as one person taking part in one activity on one occasion for at least 15 minutes. Several participations in various activities were possible during one visit to a site, and at different sites in the same activity on the same day. The survey also estimates the number of "activity hours" spent in a recreation activity. For example, 10 participations averaging 2.5 hours each would total 25 activity hours. Because it is not meaningful to talk about hours of camping, this pastime was not recorded in activity hours.

Survey method details can be found in **Michigan 1976 Recreation Survey: Design and Application** (No. 11, Appendix A). Separate statewide and regional recreation reports have also been prepared based upon the survey results (Nos. 12, 13, 14 and 15, Appendix A).

The following sections present the survey's major findings on recreation participation and spending.

Who in Michigan Recreates?

In 1976, the average Michigan resident recreated (as defined) an estimated 117 times, devoting 261 hours. Who recreates can be viewed in many ways—including sex, age, income and place of residence.

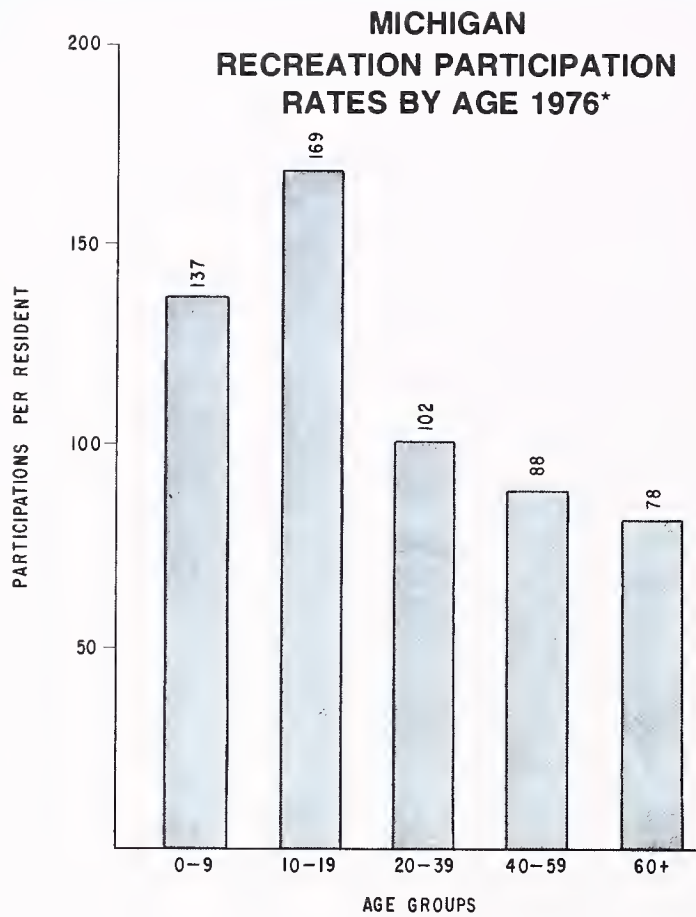
The average male recreated 127 times, as compared to 106 times for the average female. Among age groups, recreation participation rates were highest for those under 20 years of age (Figure 8).

Recreation participation rates increased gradually across household income groups, with only a slight increase from the \$15,000-to-\$25,000 income group to the over-\$25,000 group (Figure 9).

Most Michigan residents live in the southern part of the state, particularly the southeastern, and the distribution of total recreation participation by place of residence generally equates to that population distribution (Figure 10).

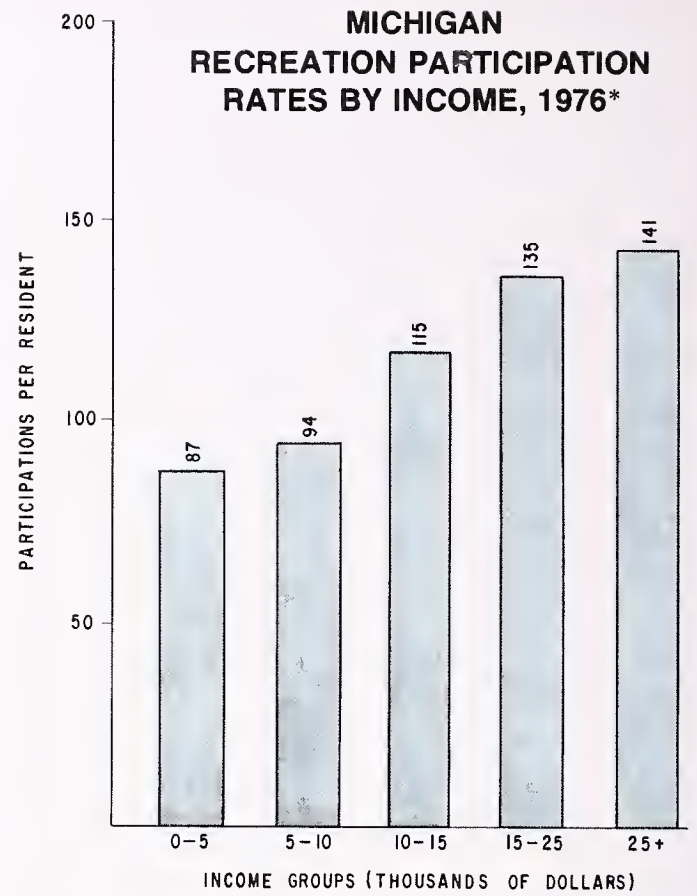
Per-person recreation participation rates varied considerably among regions. Most northern regions had higher than average participation rates; Region 11 had the highest rate and Region 5 the lowest (Figure 11).

Participation rates also varied among residents of more or less urbanized areas. The average resident of the central cities of Michigan's Standard Metropolitan Statistical Areas participated 102 times, residents of the urban area outside central cities 126 times, residents of nonurban Southern Lower Michigan 113 times, and residents of Northern Michigan 125 times (No. 13, Appendix A).



*Throughout this plan "recreation participation" means all participations in all recreation activities by Michigan residents.

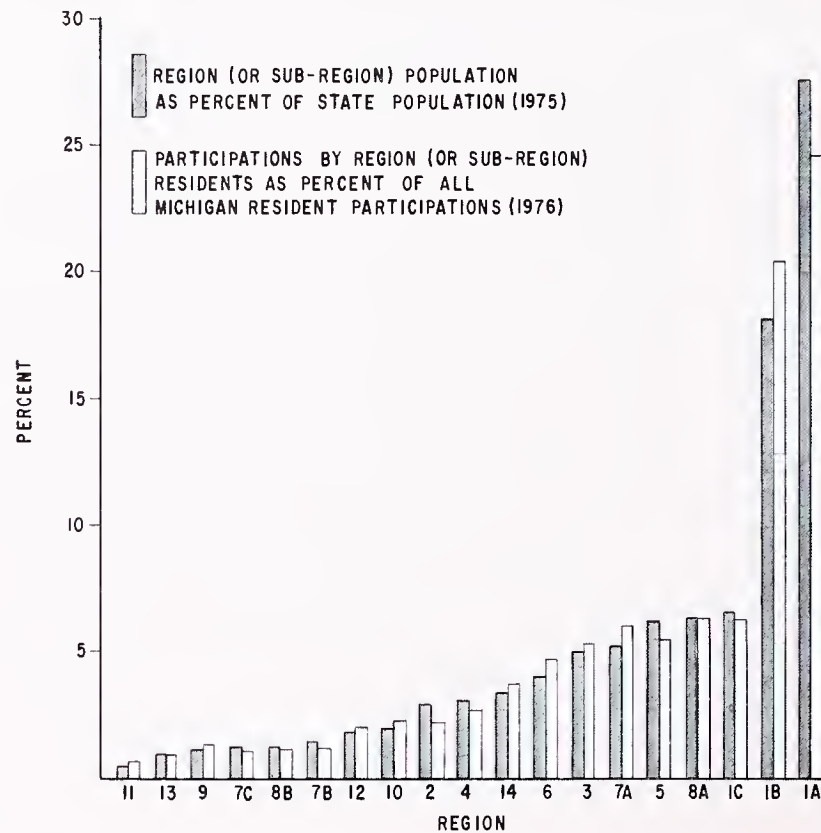
FIGURE 8



*Throughout this plan "recreation participation" means all participations in all recreation activities by Michigan residents.

FIGURE 9

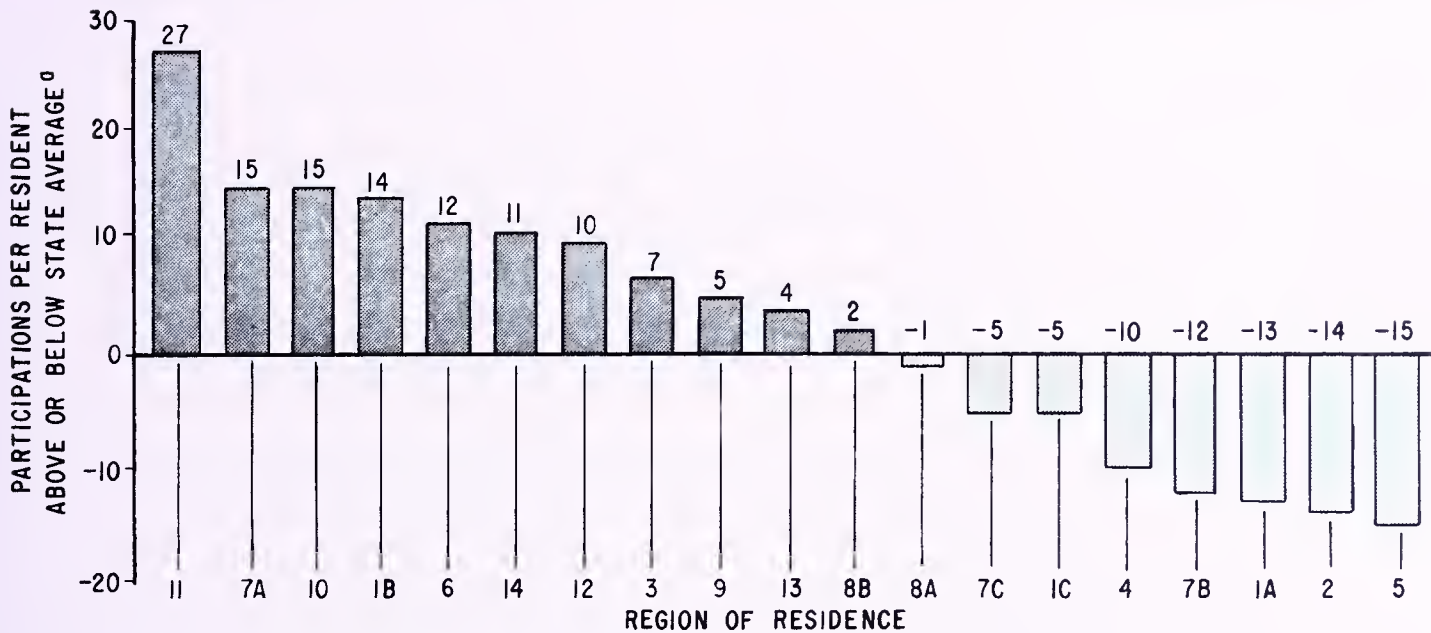
MICHIGAN POPULATION AND TOTAL RECREATION PARTICIPATIONS, 1975-76



Population estimates from Office of Budget of Michigan Department of Management and Budget and Southeast Michigan Council of Governments.

FIGURE 10

MICHIGAN RECREATION PARTICIPATION RATES BY REGION OF RESIDENCE, 1976*



* Statewide average recreation participations per resident = 117.

FIGURE 11

What Recreation Activities Do Michigan Residents Choose?

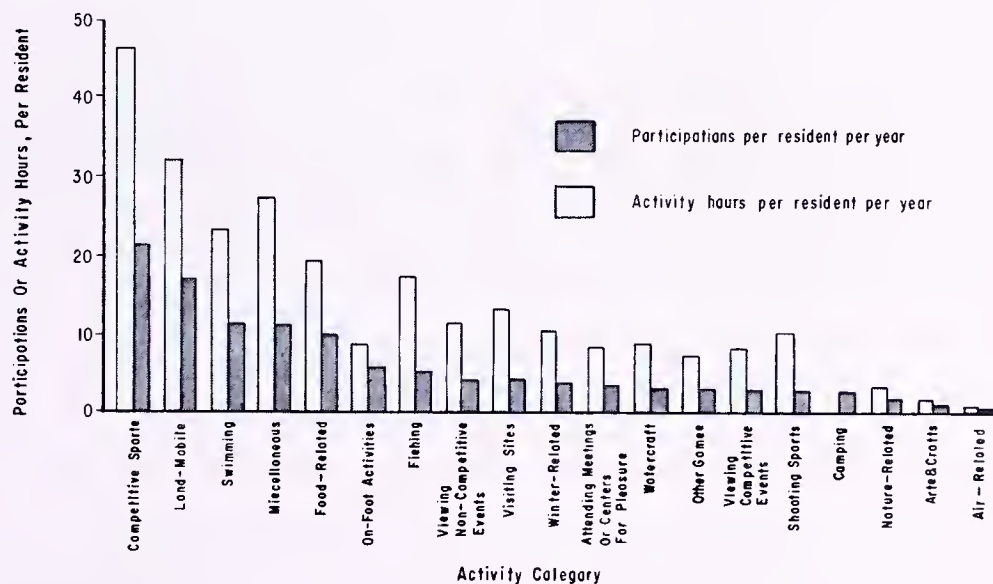
The recreation survey used 19 major categories to describe what activities people participated in. Some categories contain several similar activities, while others contain a wide variety. Participation rates in the 19 major categories are shown in Figure 12.

Greatest participation took place among activities in the Competitive Sports category.* Next was Land-Mobile

(Bicycling, Auto Riding For Pleasure, off-road vehicles, and others). Other high-ranking categories were Swimming, Food-Related (primarily Going Out To Eat Or Drink For Pleasure), On-Foot Activities, and Fishing. These six major categories accounted for over 60 percent of all recreation participation by Michigan residents.

* Names of activity categories and specific activities are capitalized throughout this chapter to provide clarity of meaning.

MICHIGAN RECREATION PARTICIPATION RATES BY ACTIVITY CATEGORY, 1976*



* Categories ranked by number of participations.

FIGURE 12

The categorizing of specific activities is somewhat arbitrary, so it is important to keep in mind what activities are included in each category. Table 4, Appendix B, shows participation rates for selected specific activities within each category. Recreation activities are defined in **Michigan 1976 Recreation Survey: Design and Application** (No. 11, Appendix A). Several activity definitions merit special discussion. Auto Riding For Pleasure in the Land-Mobile category includes only that riding which did not have a particular destination. Taking the "long route" to or from a destination is not included. Competitive Sports includes only actual participation in the activity; spectator activity is included in the Viewing Competitive Events category.

The activity categories have been modified as follows for the rest of this chapter. Because of the popularity of Bicycling, the Land-Mobile category was split into Bicycling and Land-Mobile (Except Bicycling). The Miscellaneous category was split into Yard Work And Gardening For Pleasure, Shopping For Pleasure, and Other Miscellaneous. Because of very low participation levels, the Air-Related and Arts And Crafts categories are omitted.

Participation in some activities varied greatly among age groups. For example, Competitive Sports and Swimming participation increased from small children (age 9 and under) to youth (age 10 to 19), then decreased. Age was not an important factor for other activities such as Fishing (Figure 13).

MICHIGAN RECREATION PARTICIPATION RATES BY AGE IN SELECTED ACTIVITY CATEGORIES, 1976

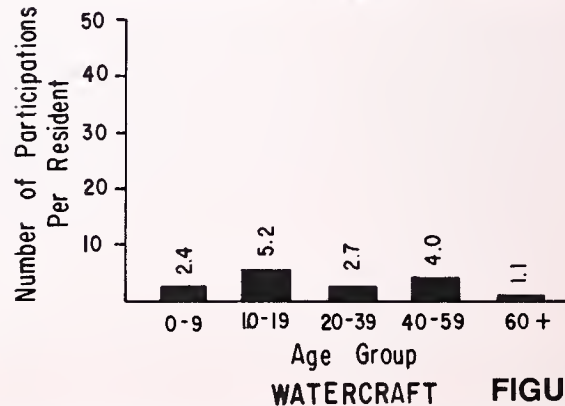
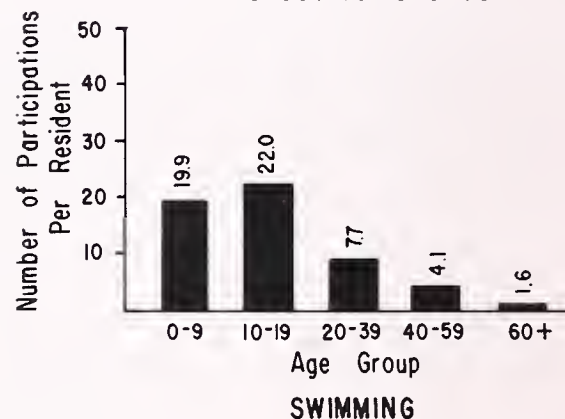
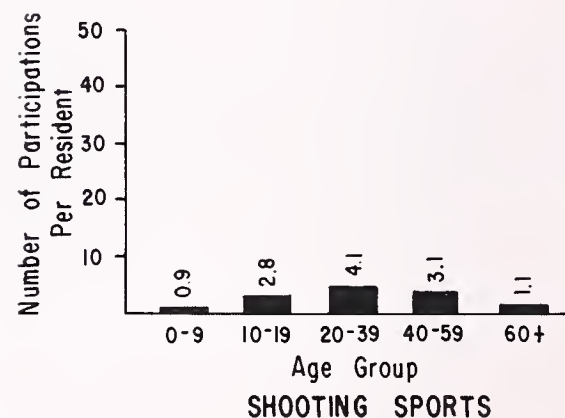
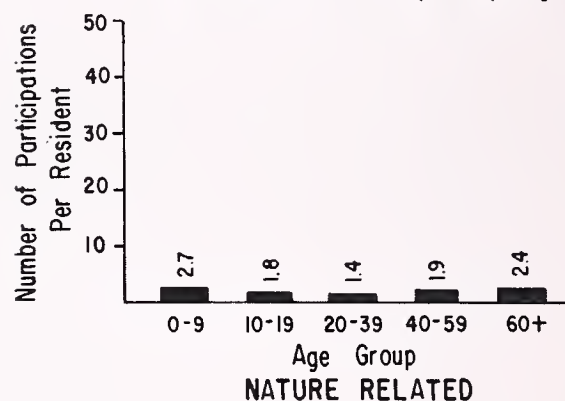
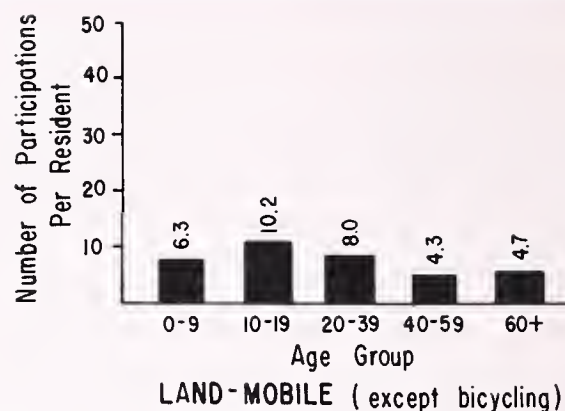
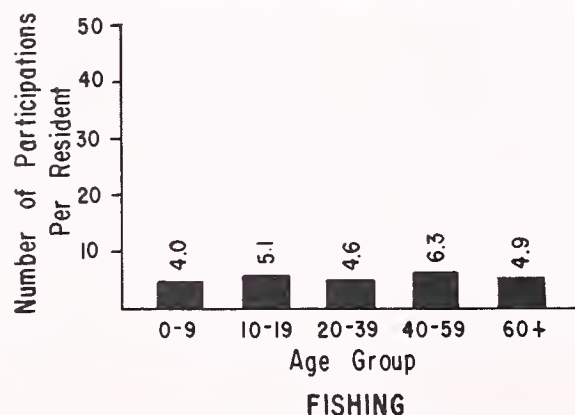
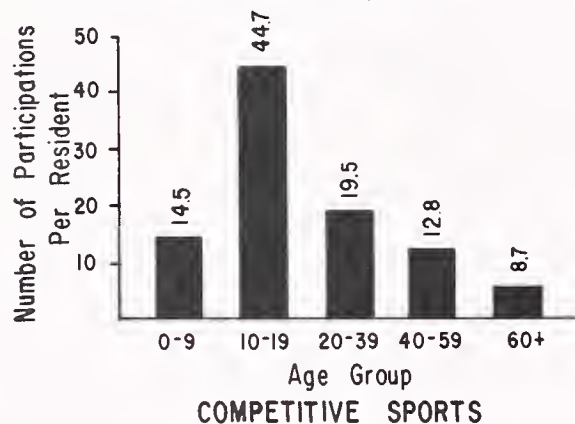
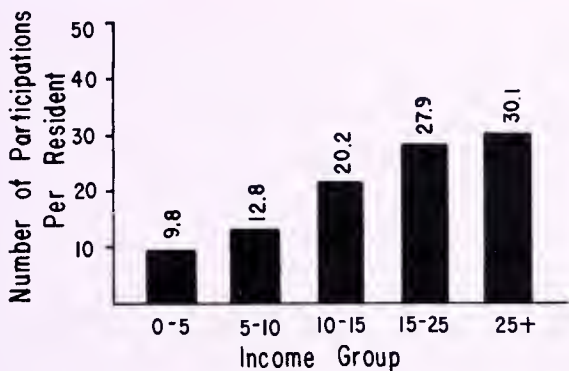


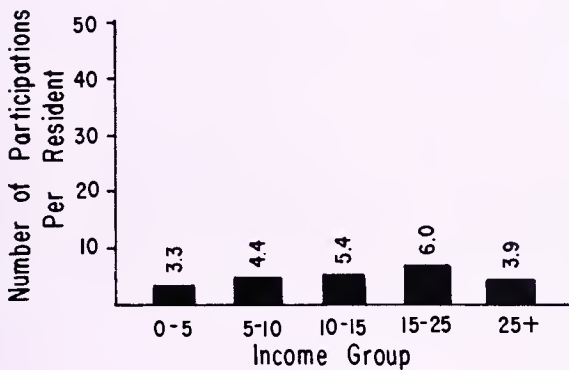
FIGURE 13

Participation rates increased with income for some activity categories, such as Watercraft and Competitive Sports. But other categories exhibited other patterns.

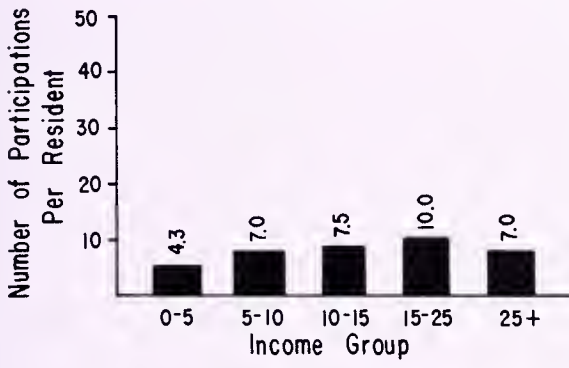
Shooting Sports and Fishing peaked for the second highest income group, then declined. Some categories, such as Nature-Related, showed fairly even participation across income groups (Figure 14).



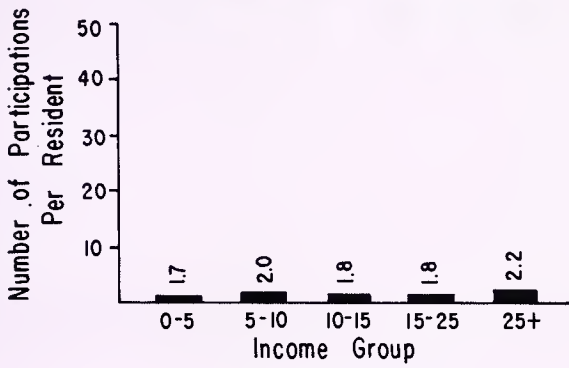
COMPETITIVE SPORTS



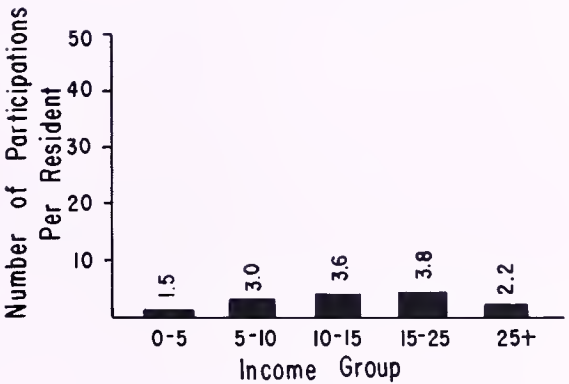
FISHING



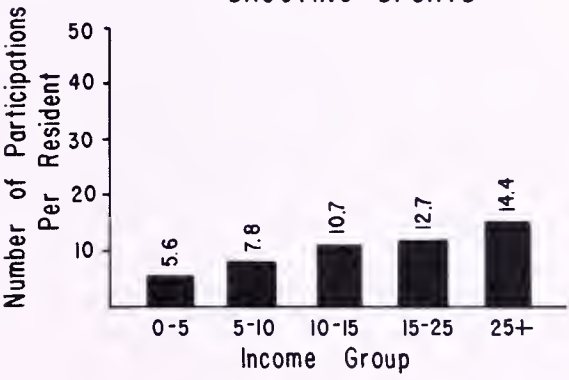
LAND - MOBILE (except bicycling)



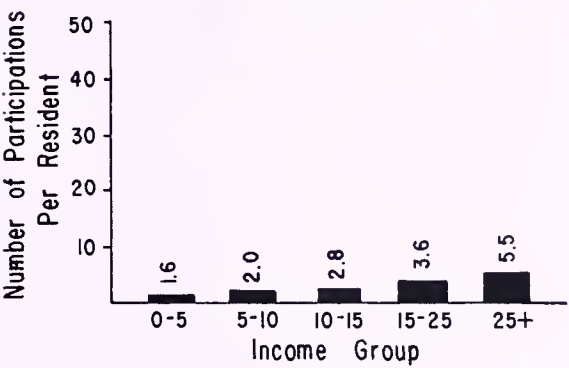
NATURE RELATED



SHOOTING SPORTS



SWIMMING



WATERCRAFT

MICHIGAN RECREATION PARTICIPATION RATES BY INCOME IN SELECTED ACTIVITY CATEGORIES, 1976

FIGURE 14

Participation rates varied more among regions for some activity categories than for others. For example, participation rates for Competitive Sports and Swimming were more uniform across regions than rates for Land-Mobile (Except Bicycling), Fishing and Shooting Sports. Resi-

dents of Sub-region 1A (Wayne County) had the lowest participation rates for the latter three categories, while residents of the northern regions participated in those three at high rates (Table 22).

MICHIGAN RECREATION PARTICIPATION RATES IN SELECTED ACTIVITY CATEGORIES BY REGION, 1976

Region	Number of Participations Per Resident				
	Competitive Sports	Fishing	Land-Mobile ¹	Shooting Sports	Swimming
1A	23.1	2.6	4.1	1.3	10.8
1B	24.1	6.5	5.9	3.0	14.3
1C	16.8	2.8	7.7	3.7	12.4
2	21.3	4.9	8.0	2.1	9.3
3	23.1	4.8	9.4	2.4	12.3
4	20.6	7.1	11.6	2.6	9.3
5	20.5	4.1	6.5	2.8	8.8
6	19.6	4.5	8.8	1.9	13.0
7	27.4	6.7	10.4	4.7	10.2
8	18.7	7.7	7.5	3.6	10.4
9-10	15.9	8.1	14.1	4.1	13.1
11-12-13	17.8	8.3	11.2	7.3	12.2
14	17.0	5.4	8.1	3.9	12.7

¹ Except bicycling.

TABLE 22

RECREATION PARTICIPATION RATES IN SELECTED ACTIVITY CATEGORIES FOR RESIDENTS OF MICHIGAN CENTRAL CITIES, OTHER URBAN AREAS, AND NONURBAN AREAS, 1976

Activity	Number of Participations Per Resident			
	Central Cities	Urban Areas Outside Central Cities	Nonurban Southern Lower Michigan	Northern Michigan
Camping	2.0	2.7	2.7	2.7
Competitive Sports	18.6	26.4	19.6	16.4
Fishing	2.9	5.2	5.4	8.5
Land Mobile (except bicycling)	4.5	5.8	9.7	12.3
Nature-Related	1.0	1.4	2.6	4.1
On-Foot	5.5	5.9	5.2	7.4
Shooting Sports	1.2	2.6	3.9	5.5
Swimming	11.8	11.6	11.5	11.8
Viewing Competitive Events	2.2	3.4	3.6	2.9
Visiting Sites	4.1	4.9	3.7	3.2
Watercraft	2.0	4.5	2.9	3.1

TABLE 23

For some activity categories, participation **increased** as the degree of urbanization of an area **decreased**. Residents of central cities had lowest rates, and Northern Michigan residents highest rates, for such natural-resource based activities as Fishing, Land-Mobile (Except Bicycling), Nature-Related and Shooting Sports. For these activities, the degree of variation between the two extremes is remarkable. For other activities, such as Competitive Sports, Visiting Sites, and Watercraft, residents of urban areas outside central cities had highest rates. Swimming rates varied little among the four areas (Table 23).

When and Where Do Michigan Residents Recreate?

Michigan residents recreated at a higher rate on weekends and holidays than on weekdays. Per-resident participations on weekends were 0.39 per day and on weekdays were 0.29 per day. However, since weekdays made up 70 percent of all days in the year, more overall recreation took place on weekdays than weekends.

Recreation participation rates viewed by season show the great influence of Michigan's climate. In the summer of 1976, the average Michigan resident recreated at nearly double the rate of any other season. Seasonal rates were: Summer, 47.3; Fall, 23.6; Winter, 19.7; Spring, 26.0.

Sixty-eight percent of all Michigan resident recreation took place outdoors, and 32 percent indoors. The survey included all activity done mainly for pleasure or enjoyment outside private homes; thus activity inside private homes was not included, although activity inside any other type of building was.

During summer, outdoor recreation participation peaked, and indoor recreation was lowest. The opposite was true for winter, which was the only season in which indoor recreation exceeded outdoor.

About 75 percent of 1976 recreation participations took place in the home county. Another 12 percent took place outside the home county but within 100 miles, seven percent at a distance of 100-200 miles, and six percent over 200 miles.*

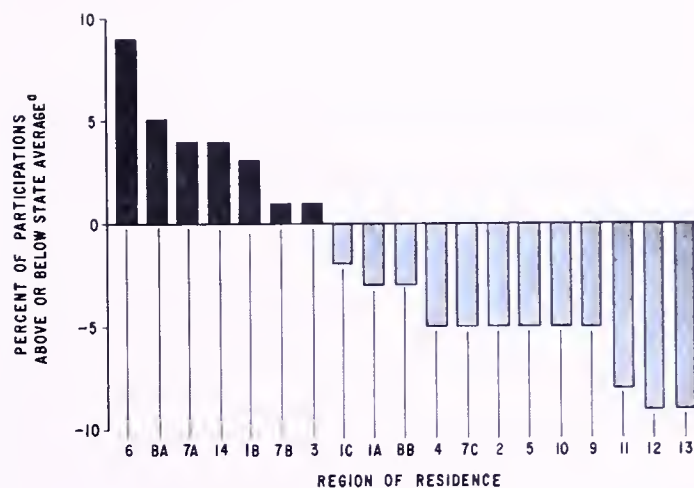
Most recreation took place within the county of residence, with only 25 percent "exported" outside the home county. "Home county" is used to define export rather than "home region," because of the variation in geographic size of regions. Residents of one region might recreate more outside their region simply because it is small and they do not have to travel far to leave it. Since county size is more uniform than that of regions, a county definition of export allows more meaningful comparisons.

Region 6 residents did more of their recreation outside the home county than residents of any other region, while Upper Peninsula residents had the lowest county export. The fact that Upper Peninsula counties are larger may contribute to these lower export rates (Figure 15).

There was no clear geographic pattern of export. Many factors are involved in these differences, but income and local recreation opportunity are probably the most important.

Some activities tended to occur closer to home than others. For example, Michigan residents only did about nine percent of their Competitive Sports recreating away

MICHIGAN RECREATION PARTICIPATION OCCURRING OUTSIDE HOME COUNTY, 1976*



* Statewide average percentage of recreation participations = 25%.

FIGURE 15

from their home county. At the other extreme, 86 percent of Camping was exported. Other **low**-export categories were On-Foot Activities and Swimming while other **high**-export categories were Visiting Sites, Watercraft, Nature-Related and Fishing (Figure 16).

MICHIGAN RECREATION PARTICIPATION OUTSIDE HOME COUNTY FOR SELECTED ACTIVITY CATEGORIES, 1976

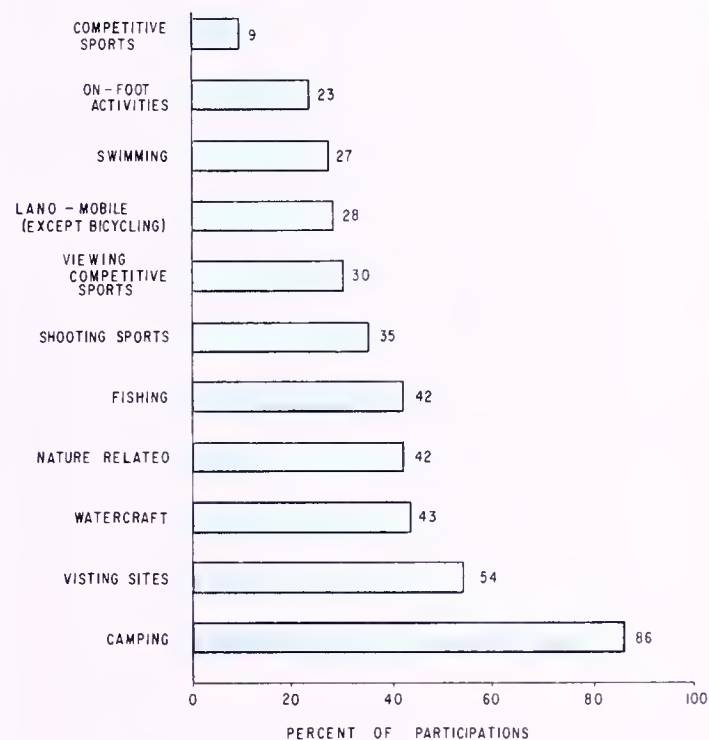


FIGURE 16

* These are straight-line distances from center of home county to center of participation county, excepting travel between peninsulas which was routed across the Mackinac straits.

Figure 16 shows that the majority of Camping and Visiting Sites participation took place outside the home county. Figure 17 shows in more detail where participation in these high-export activities took place. Camping participation was greatest in Regions 1B and 1C and in the northern Lower Peninsula. A large portion also occurred out-

side the state, while virtually none took place in Wayne County (1A). Visiting Sites followed a very different pattern. Its high export level was mainly due to the large share (over 30 percent) going out of the state. The next largest shares occurred in Regions 1A and 1B which accounted for another 29 percent.

MICHIGAN PARTICIPATIONS IN CAMPING AND VISITING SITES BY REGION OF DESTINATION, 1976

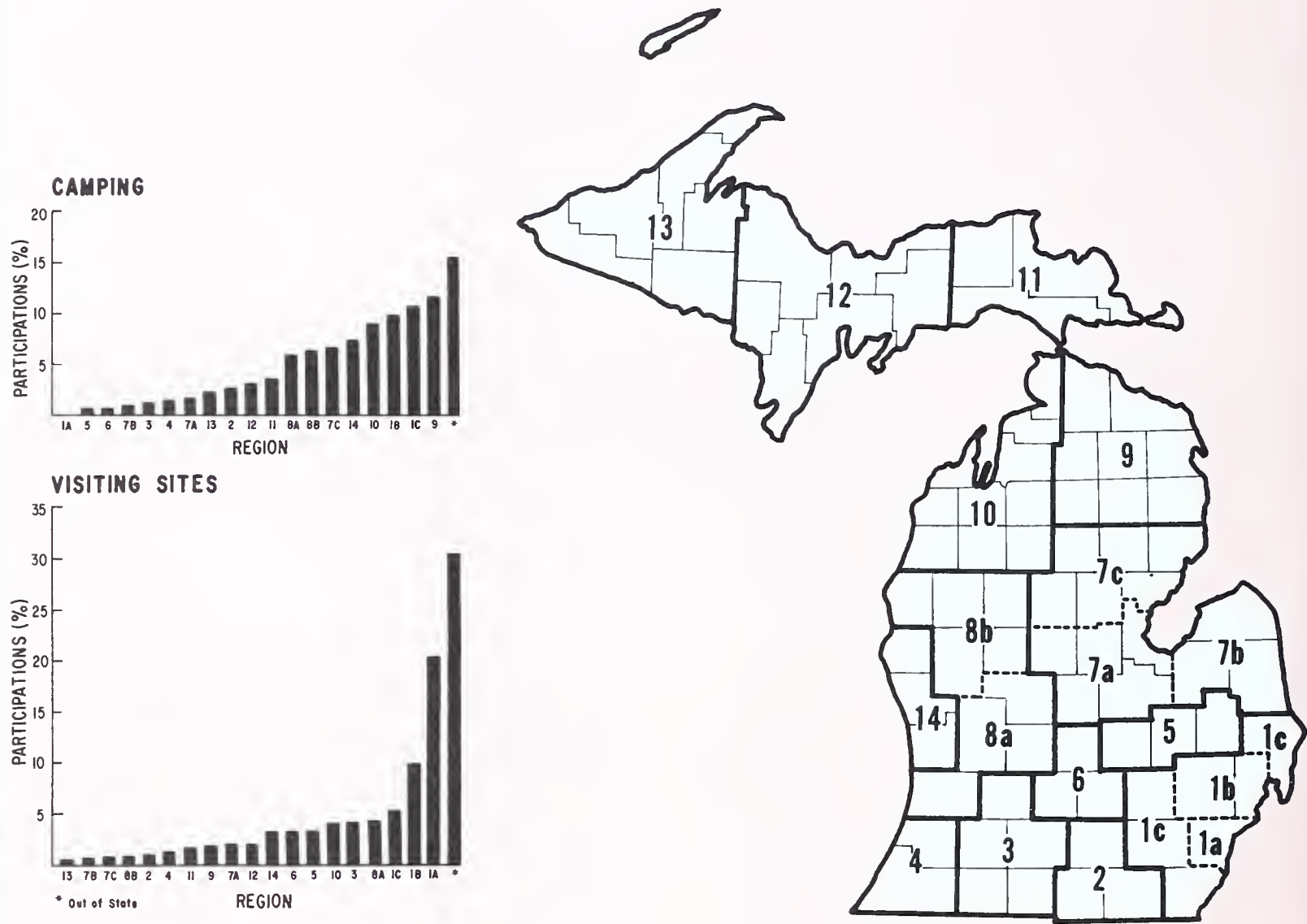


FIGURE 17

Who Provides Recreation in Michigan?

The survey employed a number of recreation "provider" categories. For each participation reported by a respondent, the provider (agency or party owning, controlling, or managing the site) was identified. For water-based recreation, respondents indicated the provider of the access site. When the provider of an activity or event differed from its site provider (e.g., church picnic at city park), the **site** provider was reported. Many "providers" do not intentionally provide for recreation use. Recreation use of vacant private land is an example.

Provider categories are:

Michigan local government: Municipalities, townships, counties, public educational institutions and the Huron-Clinton Metropolitan Authority (designated recreation sites only).

Michigan DNR: State parks and recreation areas, Mackinac Island State Park Commission, state forests and game areas (does **not** include access sites and marinas provided by DNR Waterways Division).

Federal areas in Michigan: National Park Service, Forest Service and Fish and Wildlife Service.

Michigan—other public designated: All other designated public recreation sites. Includes access sites provided by DNR Waterways Division and those provided by other public agencies (this category was necessary because many respondents could not identify providers of public access sites they used.)

Michigan public not designated for recreation: All public resources not designated or specifically intended for recreational use, including public streets, roads and sidewalks used for bicycling, auto riding for pleasure, jogging, etc.

Michigan commercial: Businesses operated for profit.

Michigan private organization: Nonprofit organizations such as YMCA, YWCA, churches and private colleges.

Michigan private individual: Site owned or controlled by individual not operating a recreation business (includes recreation on rural land and vacant private property, with or without owner's permission, but does not include site owned or controlled by participant or member of his/her household).

Michigan participant's household: Site owned or controlled by participant or member of household.

Out-of-Michigan public: All public sites outside the state.

Out-of-Michigan private: All private sites outside the state.

The Michigan private sector (commercial, private organization, private individual and participants' household) provided 52 percent of all Michigan resident recreation. Commercial providers accounted for the largest portion of the private total.

The Michigan public sector provided a somewhat smaller share (42 percent) than the private sector. Local governments provided about half the public total. The DNR share (excluding access sites and marinas) was 3.5 percent of all recreation and the federal share one percent. The great volume of total participation must be kept in mind when considering these percentages. The DNR provided nearly 37 million participations, the federal agencies over 10 million.

About 14 percent of participation was pursued on public resources not designated or intended for recreation. Six percent of Michigan resident participations took place out-of-state (Figure 18). More detail is available in Publication No. 14, Appendix A.

PERCENT OF MICHIGAN RECREATION PARTICIPATIONS BY PROVIDER, 1976

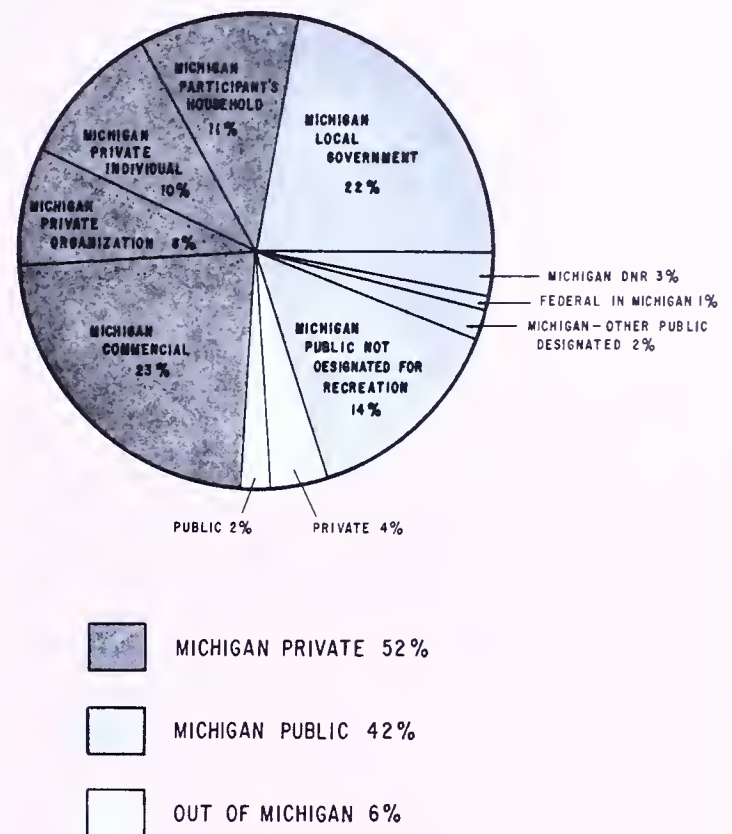


FIGURE 18

Michigan local government (including public schools) provided more participation in Competitive Sports than any other category. Other important local government categories were Swimming, Viewing Competitive Events, Visiting Sites, Fishing, and On-Foot Activities. For the DNR (excluding public access sites), Camping topped the activities-provided list, followed closely by Swimming. Fishing, Land-Mobile (Except Bicycling), Shooting Sports, and Watercraft were also important DNR provisions. For federal recreation resources, Land-Mobile (Except Bicycling) was first and Camping second, followed by Swimming, Nature-Related, and Shooting Sports. "Michigan other public designated" included much use of public access sites. Fishing, Watercraft and Swimming ranked first, second and third. "Michigan public not designated" was mainly recreation use of streets, roads and sidewalks. Bicycling was the top category, followed by

Land-Mobile (Except Bicycling) and On-Foot Activities. For "Michigan private," which included over half of all participation, the first three activities were Competitive Sports, Food-Related, and Swimming. When Michigan residents recreated outside the state, they participated most in Visiting Sites, Swimming, Food-Related, and On-Foot Activities (Table 5, Appendix B).

"Michigan private" providers dominated most activity categories. Exceptions were Bicycling and On-Foot activities, dominated by "Michigan public not designated" (mostly streets, roads, and sidewalks). Walking and Jogging made up a large share of the participation in the On-Foot category. Another exception was Visiting Sites, dominated by local government and out-of-state providers. Viewing Competitive Events was dominated by the local government provider category, which included public school facilities (Table 24).

MICHIGAN RECREATION PARTICIPATION BY PROVIDER FOR ACTIVITY CATEGORIES, 1976

(In Percentages)

Activity Category	Michigan Local Government	Michigan DNR	Federal in Michigan	Michigan Other Public Designated	Michigan Public Not Designated	Michigan Private	Out of Michigan Public	Out of Michigan Private	Other
Shooting Sports	12	10	3	0	0	72	0	2	0
Fishing	20	8	1	18	2	47	2	2	0
On-Foot Activities	16	6	1	0	50	22	4	2	0
Winter-Related	22	2	0	5	4	63	0	2	1
Swimming	26	5	1	3	0	57	2	5	0
Watercraft	13	8	1	10	0	62	1	5	0
Bicycling	3	2	0	0	85	8	0	1	0
Land-Mobile (except bicycling)	5	5	5	1	43	37	3	1	1
Food-Related	7	2	0	1	1	78	1	10	0
Viewing Competitive Events	74	0	0	1	0	21	2	3	0
Viewing Non-Competitive Events	16	1	0	1	1	73	1	7	0
Visiting Sites	43	3	1	2	3	16	18	13	1
Camping	14	27	8	0	0	36	6	9	0
Yard Work, Gardening for Pleasure	1	0	0	0	0	98	0	0	1
Shopping for Pleasure	1	0	0	0	0	90	0	8	0
Nature-Related	11	11	6	1	14	52	3	2	1
Attending Meetings or Centers for Pleasure	23	0	0	1	0	73	0	1	0
Competitive Sports	42	1	0	1	2	53	0	1	0
Other Games	18	1	0	1	6	68	0	3	4
Other Miscellaneous	23	3	1	1	1	61	4	5	0
All Activities Combined	22	3	1	2	14	52	2	4	0

TABLE 24

The recreation provider distribution varied considerably by region, although the private provider share was the greatest in every region. Local governments provided from 10 to 30 percent of regional recreation participations. Lowest local government shares were in the Northern Lower Peninsula, especially in Regions 9 and 7C. Their highest share was in Region 6.

The DNR provided high shares in the Northern Lower Peninsula, perhaps substituting for local governments. In Region 9, the DNR provided twice as much as local

government. The DNR share was minimal, however, in southern regions with little state land.

The highest federal shares were in Regions 8B and 9, which contain large national forest tracts.

Although the private share was dominant in every region, it varied substantially, from 43 percent in Region 12 to 64 percent in Regions 8A and 2. These are estimates of participation **taking place in** each region, regardless of whether done by residents or nonresidents of the region (Table 25).

Most (68 percent) of the recreating by Michigan residents took place outdoors. Participation at DNR and federal facilities was almost 100 percent outdoors. The private sector provided the largest indoor share of recreation with 44 percent (Table 6, Appendix B).

The provider distribution varied for different population segments just as it did for activities. Examined here are the relationships of age, sex, and household income to three providers: local government, DNR, and the private sector.

Youth (age 10 to 19) made the greatest use of local government recreation opportunities. Participation rates at DNR facilities were more even across age groups, although youth had the highest rate. The private sector pattern was similar to the DNR pattern.

Highest DNR participation was by members of the middle income groups. Private sector participation rates increased uniformly with household income. The same was true for recreation participation provided by local government except for a slight drop from the next-highest to highest income group. Males recreated more than females for all three providers (Table 26).

MICHIGAN TOTAL RECREATION PARTICIPATION BY REGION OF DESTINATION AND PROVIDER, 1976

(Percent of Region Total)

Region	Michigan Local Government	Michigan DNR	Federal in Michigan	Michigan Other Public Designated	Michigan Public Not Designated	Michigan Private
1	25	2	—	2	16	55
A	25	—	—	2	17	56
B	27	1	—	1	15	55
C	23	8	—	1	14	53
2	21	3	—	2	11	64
3	18	1	—	2	18	60
4	25	2	—	5	12	56
5	26	1	—	3	17	51
6	30	1	—	1	12	57
7	21	5	—	3	15	55
A	26	1	—	2	17	54
B	20	4	—	3	14	59
C	12	16	2	4	10	56
8	18	3	2	4	12	61
A	17	2	—	3	14	64
B	19	5	8	5	9	54
9	10	21	13	3	7	46
10	16	10	4	5	12	52
11	15	15	3	3	14	48
12	24	7	5	4	18	43
13	24	7	2	3	12	51
14	19	8	2	3	16	53
State						
Average*	22	3	1	2	14	52

* In addition, two percent of all participations occurred on out-of-Michigan public resources. Four percent occurred on out-of-Michigan private resources.

TABLE 25

MICHIGAN PARTICIPATION RATES BY AGE, SEX, AND INCOME, 1976

	Number of Participations Per Resident						
	SEX		AGE GROUPS				
Provider	M	F	0-9	10-19	20-39	40-59	60+
DNR	5	3	5	5	4	3	2
Local							
Government	28	22	28	50	20	13	7
Private	65	56	64	76	56	53	50
	Income Groups*						
Provider	0-5	5-10	10-15	15-25	25+		
DNR	1	3	6	4	4		
Local							
Government	18	20	24	32	30		
Private	45	48	59	69	75		

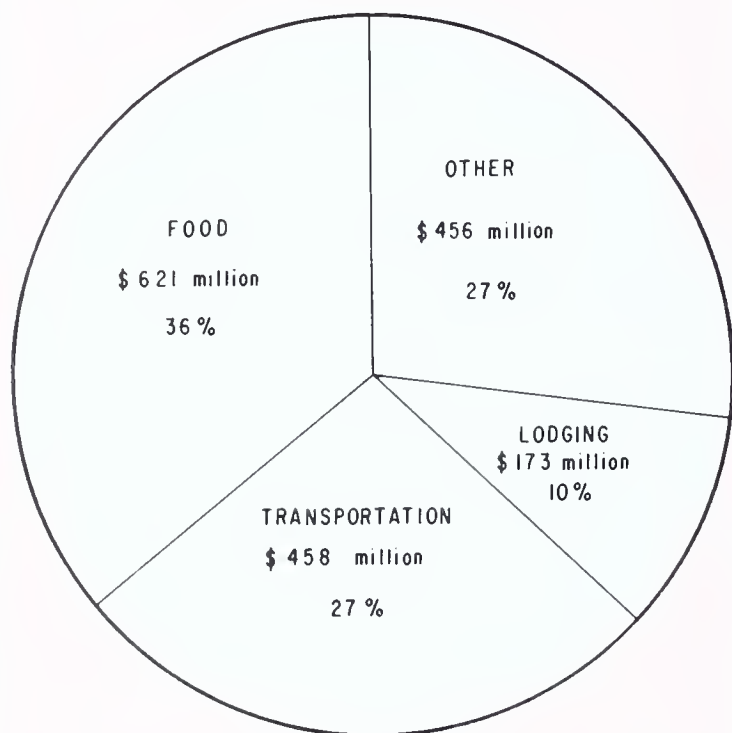
*In thousands of dollars.

TABLE 26

Recreation Spending by Michigan Residents

Michigan residents spent an estimated \$1.7 billion on recreation outings during 1976. Most of this was spent to get to and from the recreation site and maintain participants while there. Transportation, lodging and food made up 73 percent of all spending. The remaining 27 percent was for entrance fees, equipment rental, etc. (No. 15, Appendix A).

RECREATION EXPENDITURES BY TYPE, 1976



(1.707 billion = 100%).

FIGURE 19

Per-resident spending increased little from low to middle-income groups, then shot up for high-income groups (Figure 20).

There were substantial differences among regions in per-resident spending. Region 6 residents spent the most, Region 13 residents the least (Figure 21).

Much recreation spending is done outside the home region. A region exports recreation dollars (residents spend outside the region) and imports recreation dollars (residents of other regions come into the region and spend). Some regions have net gains (import exceeds export), others have net losses (export exceeds import). This "income transfer" is important to regional economies. In 1976 most of Michigan's northern regions experienced large net gains, while southern regions had net losses. Because of the southern regions' greater populations their losses were generally not as large as the northern gains, on a per-resident basis (Figure 22).

**MICHIGAN RESIDENT
RECREATION EXPENDITURES
BY HOUSEHOLD INCOME GROUP, 1976**

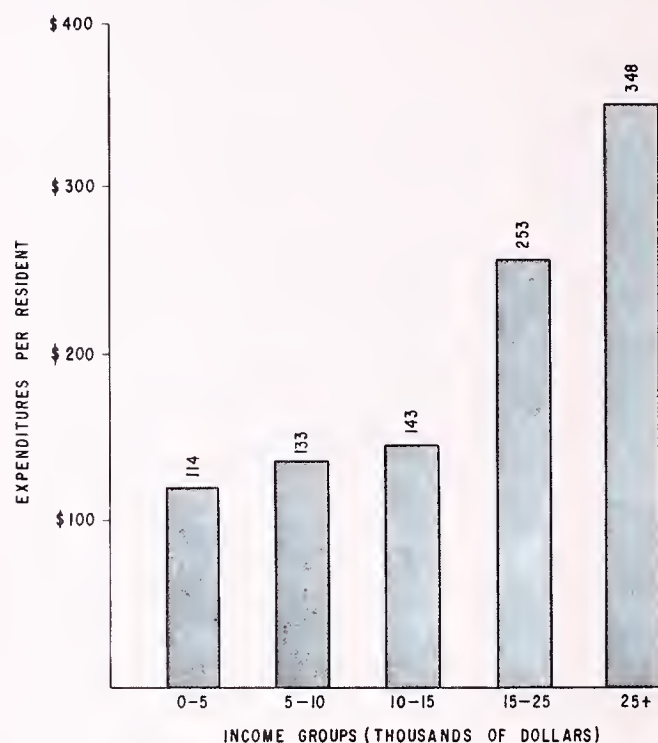


FIGURE 20

MICHIGAN RESIDENT RECREATION EXPENDITURES BY REGION OF RESIDENCE, 1976

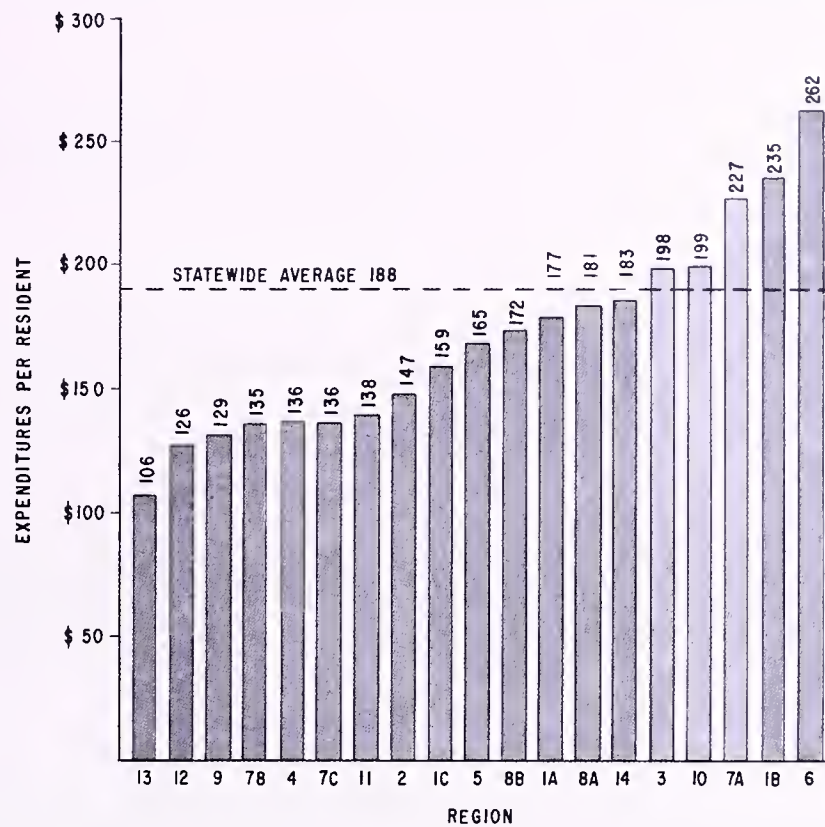
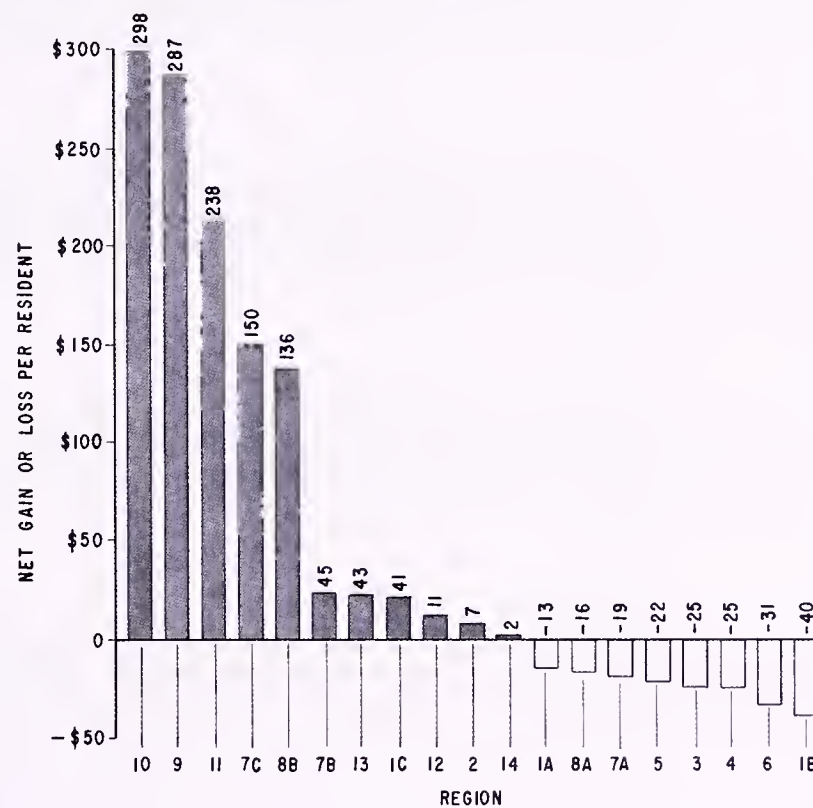


FIGURE 21

MICHIGAN RECREATION EXPENDITURES—NET GAIN OR LOSS BY REGION, 1976*



*Excludes en-route expenditures on overnight trips, out-of-state expenditures, and expenditures by visitors.

FIGURE 22

Population Influences on Future Recreation Participation

Many factors influence recreation participation, and population changes are among the most important. These include both changes in total population and its geographic distribution by age and sex. This section examines projected population changes and their probable effects on Michigan resident recreation participation.

Michigan's latest population projections forecast a modest increase, from 9.1 million in 1975 to 10.5 million in 2000, an increase of 15 percent in 25 years. This is a slower population growth rate than has been experienced in the past. Thus, overall population growth is expected to produce only a modest increase in recreation participation.

Age Changes

The age structure of Michigan's population is changing, and that change will continue. Not only will the 19-and-under age group make up a smaller **share** of the population, but the actual **number** of people in that group is expected to decrease over the remainder of this century. The number of people in the 20 to 39 year-old group will increase greatly from 1975 to 1985, then decline slightly. This decline will result from the movement of the "post-war baby-boom" generation into the middle-age (40-to-59) group, and that group will swell significantly by 2000. Senior-citizen (60 and over) numbers will also steadily increase (Figure 23).

The overall result will be an increase in median age from 27.6 (1975) to 30.4 (1985) to 35.2 (2000), a remarkable "aging" of the population in such a short period. The "evening-out" of the age group populations has enormous implications for recreation. Participation in activities dominated by people 19 and under will tend to decline, while demand for activities by middle-aged and older adults will increase dramatically.

Geographic Changes

The population increase will not occur uniformly across the state. Some areas will have greater increases than others and a few may actually decline. Examined here are both projected changes in the **number** of people and **percentage** changes in population for each county.

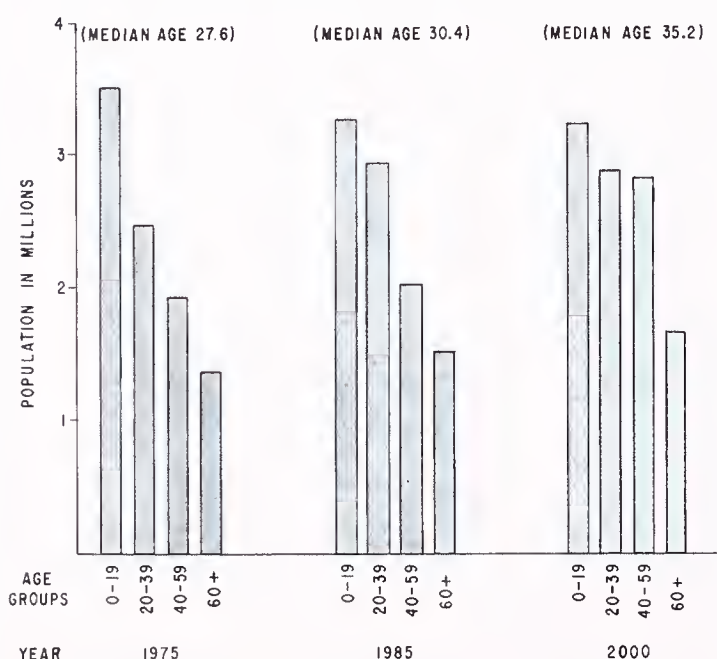
The greatest increases in **numbers** of people from 1975 to 2000 will be in the metropolitan counties surrounding Detroit, although Wayne County itself is expected to decline in population. Half of Michigan's additional population will reside in the six Region 1 counties around Wayne County, and large increases in numbers will also occur in other metropolitan counties. Thus, most of the added recreation demand will be among residents of our metropolitan areas (Figure 24).

The geographic pattern of **percentage** changes in population is very different. Interior counties of the Northern Lower Peninsula are expected to show most of the greatest percentage increases. These counties are Kalkaska, Lake, Otsego, Crawford, Montmorency, and Roscommon. The emerging tendency of rural areas to grow at a faster rate than metropolitan areas, both nationwide and in Michigan, has been well documented. Recreation providers, and providers of all other services in these counties, will need assistance to respond effectively to this rapid rate of population growth, while continuing to protect the environment (Figure 25).

Livingston County, in Southeast Michigan, is the only county near the top for population increase both in numbers and percentage. State and local interests must work together effectively here to see that recreation and other services are provided and that adverse environmental impacts are minimized.

Population changes are discussed above by county because counties vary less in size than regions. Some regions will have larger increases in numbers of people merely because they include more counties than other regions. The regional figures are presented to provide compatibility with other regional data in this plan. Sub-region 1A, Wayne County, is expected to have a net loss, with other regions and sub-regions showing net gains. Sub-region 1C will have the largest gain both in numbers and percent of people while Region 11 will have the smallest gain by both measures (Table 7, Appendix B).

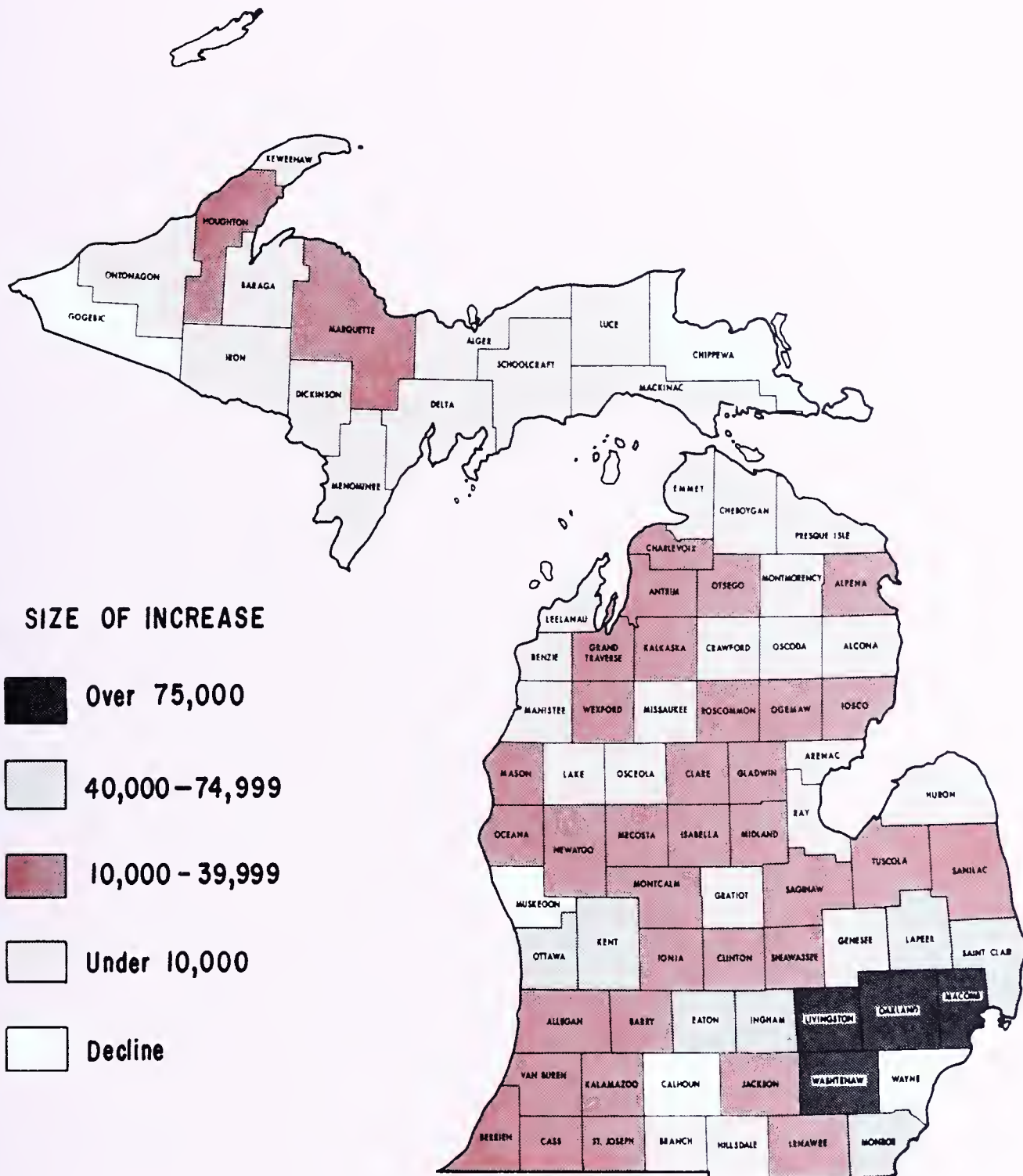
**MICHIGAN POPULATION PROJECTIONS
BY AGE FOR 1975, 1985, AND 2000***



* Michigan Department of Management and Budget, Office of Budget, 1978. *Population Projections for Michigan to the Year 2000*.

FIGURE 23

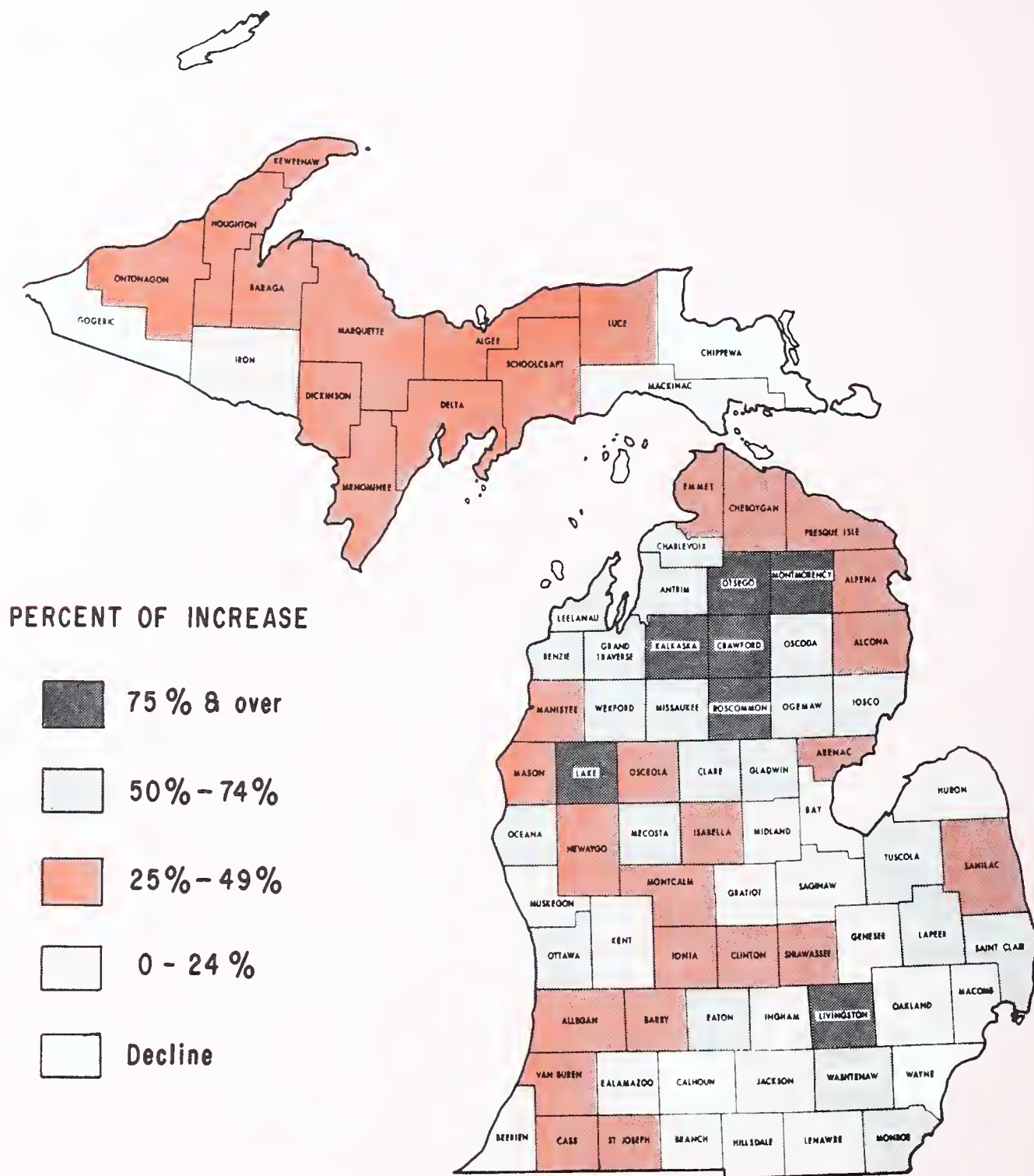
PROJECTED MICHIGAN POPULATION CHANGE BY COUNTY, 1975-2000*



* Michigan Department of Management and Budget, Office of Budget, 1978.
Population Projections for Michigan to the Year 2000.

FIGURE 24

PROJECTED MICHIGAN POPULATION CHANGE IN PERCENT BY COUNTY, 1975-2000*



* Michigan Department of Management and Budget, Office of Budget, 1978.
Population Projections for Michigan to the Year 2000.

FIGURE 25

Implications of Population Change for Recreation Participation

To help assess the implications of population change for recreation, this section projects participation on the assumption that participation rates will remain constant for each age group by sex in each county of residence. In other words, the method assumes that future members of a given age group by sex in a given county will exhibit the same recreation behavior as their 1976 counterparts. This method ignores some important factors that may influence participation such as amount of leisure time, costs, personal income, convenience and advertising. But it does suggest what influence population factors alone will tend to have on participation. It is important to understand that the method assumes lack of opportunity will not limit growth of total participation resulting from population growth and change. Participation projections are employed only as an aid in anticipating change in the recreation system. In conjunction with other information presented, projections are used to make recommendations. This method contrasts with the traditional approach of subtracting current opportunities from a standard to determine needs. This cannot be done meaningfully because satisfactory standards do not exist. Consideration was given to the application of various statistical techniques to establish relationships between recreation participation and the resource. Despite considerable effort toward this end prior to the 1976 recreation survey, the results were always suspect even when statistical measures of correlation between two or more variables appeared good. The difficulty is that even "apparent" modest success does not mean cause and effect relationships have been established. This problem can lead to an enormous amount of meaningless information, especially when one considers the comprehensiveness of the survey definition. This is more a note to the professional than the layman, and is why this plan strives to understand the parts of the recreation system better as opposed to creating "sophisticated-looking" equations that serve only to obscure the issues.

This plan's projection method indicates that recreation participation will increase somewhat less than population by 2000. This will largely result from a decline in the number of people below age 20, who had very high 1976 participation rates. Their declining share of the population will tend to lower the total recreation participation rate for all Michigan residents.

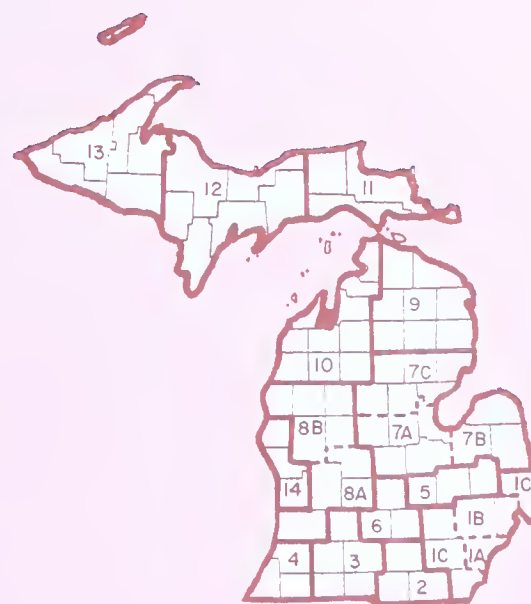
Overall population increases, however, will tend to increase total recreation participation for most activities. One exception is Bicycling. Those under age 20 did a large share of 1976 bicycling, and the declining population in that age group will tend to produce a slight decrease between 1976 and 2000. As stated earlier, these projections consider only the effects of population changes. Population change will tend to produce the

greatest participation increases in Food-Related activities and in Yard Work And Gardening For Pleasure. Yard Work And Gardening and Shooting Sports are projected to show the greatest percentage increases. The popularity of these activities among the growing middle and older age groups explains the expected increases. Participation in most other activities will tend to increase somewhat less than population. But Swimming and Competitive Sports participation may increase very little, due to the high share of these activities done by children (Table 27).

The projected pattern of recreation participation change by region generally resembles the pattern of population change. Because of the projected decline in the total recreation participation rate, participation increases for regions will tend to be less than the corresponding population increases.

Sub-Region 1A (Wayne County) is, as discussed earlier, the only region expected to decline in population, and is the only one in which recreation participation is expected to decline from 1976 to 2000. The method assumes continued low recreation participation rates for Wayne County residents. But this plan recommends that public agencies take action to increase recreation participation rates for residents in Wayne County.

The greatest increase in participation, both in numbers of participations and percentage, is projected for Region 1C, the outer counties of the Detroit metropolitan area. This parallels the expected population increase. Big increases in numbers of participations will tend to occur in other urban regions such as 3, 6 and 8A, and in northern Lower Peninsula Regions 7C, 8B, 9 and 10. In addition to Region 1C, large **percentage** increases in participation are projected in northern Lower Peninsula regions and possibly in the Upper Peninsula.



PROJECTED CHANGE IN MICHIGAN RECREATION PARTICIPATION BY ACTIVITY CATEGORY, 1976-2000
(These projections consider *only* the effects of *population* change on participation)

Activity Category	Participations in Millions			Change in
	Estimated 1976	Projected 2000	Change	Percent
Shooting Sports	25.7	35.6	9.9	38%
Fishing	45.2	54.9	9.7	22
On-Foot Activities	52.3	61.2	8.9	17
Winter-Related	36.3	39.1	2.8	8
Swimming	105.1	112.2	7.1	7
Watercraft	30.2	34.6	4.5	15
Bicycling	91.1	89.8	-1.3	-1
Land-Mobile (except Bicycling)	64.6	76.5	11.9	18
Food-Related	90.4	107.6	17.2	19
Viewing Competitive Events	28.3	35.6	7.2	26
Viewing Non-Competitive Events	39.9	43.9	4.0	10
Visiting Sites	38.4	42.3	3.9	10
Camping	22.9	27.3	4.4	19
Yard Work, Gardening for Pleasure	30.5	43.3	12.8	42
Shopping for Pleasure	31.0	35.7	4.7	15
Nature Related	17.0	21.8	4.8	28
Attending Meetings or Centers for Pleasure	33.1	38.6	5.5	17
Competitive Sports	197.8	208.2	10.3	5
Other Games	29.3	29.3	0.0	0
Other Miscellaneous	38.9	43.7	4.9	13
All Activities	1,057.2	1,192.3	135.1	13%

TABLE 27

Leisure Time Trends

Basically, very little change has occurred in the average work week since 1940. Vacation and holiday time have increased, but even here the change has not been as great as many might think.

Data from John D. Owen's study¹ shows adjusted average hours per work week to account for vacations and holidays and unadjusted time since 1948 (Table 28). The tabulation includes men employed in nonagricultural industries, but excludes students. Data reveals that the change has been slight. Labor force composition is a key factor in understanding what is happening to the work week. Among male students, average work time increased by about four hours a week between 1948 and 1975. Women, however, worked fewer hours per week. A steady increase of the average age of male student workers in nonagricultural industries was also noted. The proportion of workers under 18 years old dropped from 62 percent in 1948 to 38 percent in 1972. This trend reflects the increasing percentage of young people entering col-

UNITED STATES AVERAGE WORK WEEK¹

Year	Adjusted for Unadjusted Hours	Vacations and Holidays
1948	42.7	41.6
1950	42.2	41.0
1953	42.5	41.4
1956	43.0	41.8
1959	42.0	40.7
1962	43.1	41.7
1966	43.5	42.1
1969	43.5	42.0
1972	42.9	41.4
1975	42.5	40.9

¹ For non-student men employed in nonagriculture industries.

John D. Owen, Wayne State University, "Workweeks and Leisure: An Analysis of Trends 1948-75," **Monthly Labor Review**, Vol. 99 (August, 1976), pp. 3-8, Bureau of Labor Statistics, U. S. Department of Labor. Used by permission.

TABLE 28

¹ Owen, John D. "Workweeks and Leisure: An Analysis of Trends 1948-75", **Monthly Labor Review**, Vol. 99 August, 1976, pp. 3-8.

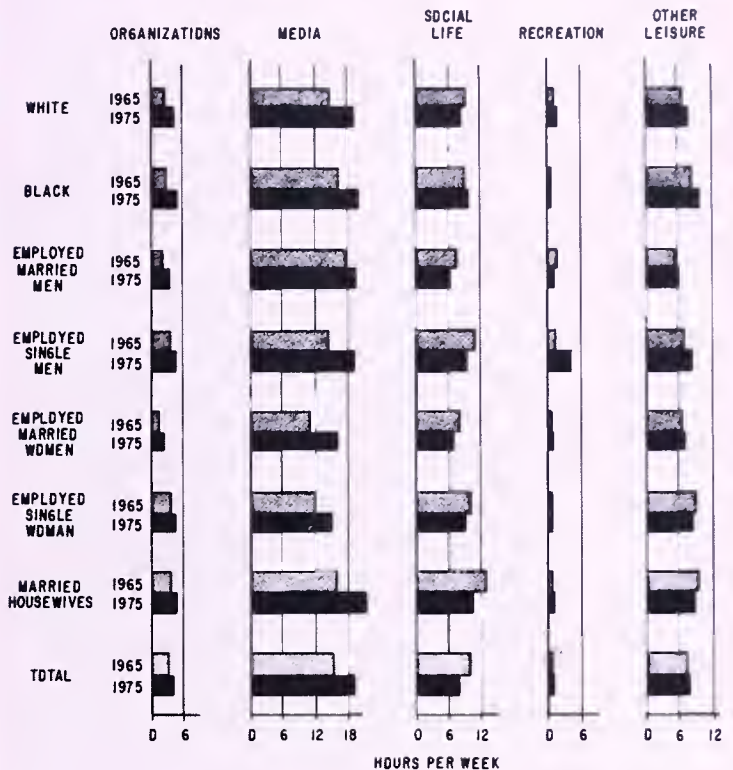
lege. Older students work longer hours so the increasing average age of students has produced an "apparent" increase in the average hours of work for students. However, within age categories there has been no significant change in the average work week. The decline in hours of working women is also the result of changes in the composition of the labor force. Among employed women, for example, the proportion of those married increased from 30 percent in 1948 to 58 percent in 1975. The proportion of working mothers with children under 18 rose from 24 percent of all women in the labor force in 1950 to 37 percent in 1975. The rising proportion of working women tends to reduce average hours for women, because women with children, tend to work fewer hours. Employed women work about 1.4 fewer hours a week for every child at home under age 15. Employed women also have about 12 fewer hours a week for free time activities than full-time homemakers. Employed women are estimated to spend about 33 hours per week in unpaid work activities leaving them about 6 hours less free-time than employed men. The assessment of changes in the work week are significant, but perhaps of greater importance are the many sociological changes occurring. The increasing number of working single and married women is striking.

Another study, conducted by John D. Robinson,¹ shows that the overall reduction in the average work week between 1965 and 1975 was minor. Robinson's data shows a slight increase in free time between 1965 and 1975 with the corresponding reduction in time use occurring in both work for pay and family care. Over this 10-year period communications media absorbed between 30 and 50 percent of all free time for most of the population groups. This category of time use includes listening to the radio, reading newspapers and periodicals and attending movies, with the largest proportion of time spent watching television. Television viewing was mentioned by 46 percent of the respondents as a favorite form of leisure activity (Table 8, Appendix B).

Robinson's data indicates average hours per week spent in leisure time activities by selected population groups for 1965 and 1975. Increases have occurred in time spent in "organizations" and "media", while "social life" declined and "recreation" increased only slightly. A small increase in "other leisure" coupled with the increase in "recreation" was not enough to offset the decline in "social life." The data shows some differences exist across the population sub-groups. Employed single men experienced the greatest change in average hours spent in recreation. For others the change is either negative or insignificant (Figure 26).

¹ Robinson, John D. 1977. "Changes in Americans' Use of Time: 1965-1975, A PROGRESS REPORT," Communications Research Center, Cleveland State University.

AVERAGE HOURS PER WEEK SPENT IN LEISURE-TIME ACTIVITIES BY SELECTED UNITED STATES URBAN POPULATION GROUPS, 1965-75



U.S. Department of Commerce, Bureau of the Census, 1966. *Social Indicators*.

FIGURE 26

The following conclusions can be drawn:

1. The average work week has decreased little since the late 1940's. Most changes are due to increased vacations and holidays which are not nearly as significant as generally thought. A loss in available recreation time has occurred for many, particularly working married women and working women with children.
2. Overall, the prospects for an immediate increase in leisure time and recreation do not appear to be very good. Such change, if any, most likely will be gradual and come from a reduction in work time. Economic factors such as unemployment, growth of real hourly wages and social variables such as the birth rate and average school leaving age all can affect the prospect for a reduction in the average work week. These are difficult to predict. Current trends at the national level and in Michigan

with respect to the economy and real personal income growth indicate change will be slow. One alternative that may bring about larger blocks of available leisure time is flexible work schedules. However, this does not actually increase free time, but changes the time of occurrence. However, this is important since it can cause peaking of uses at recreation facilities.

3. Changes in leisure time are highly significant from a sociological standpoint. There are more women working and more working women are married. Much of the change in leisure time has affected youth, yet this group is the same for which less parental time is available and which is projected to be a smaller share of Michigan's population.

Changes in leisure time are important in predicting and assessing recreation needs. Some important sociological trends have been identified that must receive consideration in recreation program development. More working women and women with children need to have recreation facilities closer to home. In fact, rising energy and travel costs, leisure time trends, inflation and economic problems of our older central cities all point strongly to a "closer to home" recreation development policy.



appendices

APPENDIX A
REPORTS PREPARED IN CONJUNCTION WITH
THIS PLAN

1. **The Land and Water Conservation Fund in Michigan: The First Decade**, 1976. Recreation Services Division, DNR. Lansing, Michigan.
2. **Public Preference for Financing Public Recreation**, Survey Report No. 3, 1977. Recreation Services Division, DNR. Lansing, Michigan.
3. **Vacation Preferences of Michigan Household Heads**, Survey Report No. 4, 1977. Recreation Services Division, DNR. Lansing, Michigan.
4. **Public Opinion on the Michigan Department of Natural Resources**, Survey Report No. 2, 1977. Recreation Services Division, DNR. Lansing, Michigan.
5. **Factors Producing Changes Over Time in Recreation Activity**, Survey Report No. 5, 1977. Recreation Services Division, DNR. Lansing, Michigan.
6. **Region 1 Detroit Joint Recreation Committee Study**, 1978. Recreation Services Division, DNR. Lansing, Michigan.
7. **Recreation on Private Land: Attitudes and Opinions of Selected Rural Landowners and Urban Residents in Livingston County, Michigan**, 1978. Recreation Services Division, DNR. Lansing, Michigan.
8. **State Recreation Trail Policy Plan**, 1979. Recreation Services Division, DNR. Lansing, Michigan.
9. **Michigan Department of Natural Resources ORV Plan**, 1979, prepared by the ORV Planning Committee.
10. **Michigan's Recreation Resources: Inventory**, 1979. Recreation Services Division, DNR. Lansing, Michigan.
11. **Michigan 1976 Recreation Survey: Design and Application**, 1977. Recreation Services Division, DNR. Lansing, Michigan.
12. **Recreation by Michigan Residents**, 12 Planning Region Survey Reports, 1978. Recreation Services Division, DNR. Lansing, Michigan.
13. **Urban Recreation Participation Study**, Survey Report No. 8, 1979. Recreation Services Division, DNR. Lansing, Michigan.
14. **Michigan Resident Recreation Activities and Providers**, Survey Report No. 6, 1977. Recreation Services Division, DNR. Lansing, Michigan.
15. **Out-of-Pocket Recreation Spending: Facts and Policy Implications**, Survey Report No. 7, 1978. Recreation Services Division, DNR. Lansing, Michigan.
16. **Local Government Recreation Resources**, 1976. Recreation Services Division, DNR. Lansing, Michigan.
17. **Michigan Population Change by County and Planning Region, 1970-1975**, 1977. Recreation Services Division, DNR. Lansing, Michigan.
18. **Selected State and Federal Statutes Relating to Recreation, Resource Management, and Environmental Protection**, April 1979, Recreation Services Division, DNR. Lansing, Michigan.

Other Report References

The reports listed below are important documents referenced in this plan. They differ from the previous list in that preparation did not evolve out of the recreation planning program.

- **Proposed Designated Sand Dune Areas, Series 1**, Geological Survey Division, Michigan Department of Natural Resources.
- **Natural Rivers Management Plans.**
- **Michigan Water Quality Standards** (tentative Nov. 1978)
- **Water Quality and Pollution Control in Michigan**, July 1978, Michigan DNR publication number 4833-9501, p. 53.
- **Michigan 1976 Annual Air Quality Report**, Air Quality Division, Michigan DNR.
- **Leisure Activity Participation and Handicapped Populations: Assessment of Research Needs.** Peter J. Verhoven & Judith E. Goldstein, Coordinator; NRPA and Bureau of Education for the Handicapped, Dept. of HEW, 1976.
- **A Plan for Michigan's Shorelands.** Michigan Department of Natural Resources, August, 1973.
- Owen, John D. "Workweeks and Leisure: An Analysis of Trends 1948-75", **Monthly Labor Review**, Vol. 99, August 1976.
- Robinson, John D., "**Changes in Americans' Use of Time: 1965-1975, A PROGRESS REPORT**," Communications Research Center, Cleveland State University, 1977.
- **Population Projections For Michigan to the Year 2000.** Michigan Department of Management and Budget, 1978.
- **Social Indicators.** U.S. Department of Commerce, Bureau of the Census, 1966.

APPENDIX B

TABLE 1

MICHIGAN DEPARTMENT OF NATURAL RESOURCES REQUESTED RECREATION CAPITAL OUTLAY BUDGET BY FUNDING SOURCE, 1979-80

<u>Funding Source</u>	<u>Development</u>	<u>(Thousands of Dollars)</u>		<u>Percent of Total</u>
		<u>Land Acquisition</u>	<u>Total</u>	
State Funds				
General Funds	\$19,075.7	\$1,430.0	\$20,505.7	60%
State Park Improvement Fund	2,614.2	0.0	2,614.2	8
Waterways Fund	1,729.0	100.0	1,829.0	5
Game and Fish Fund	195.0	35.0	230.0	1
Duck Stamp	0.0	180.0	180.0	1
Subtotal	<u>\$23,613.9</u>	<u>\$1,745.0</u>	<u>\$25,358.9</u>	<u>74</u>
Federal Funds				
Land & Water Conservation Fund	5,927.0	890.0	6,817.0	20
Anadromous Fish Conservation Sport	550.0	0.0	550.0	2
Great Lakes Fisheries Commission	468.0	0.0	468.0	1
Corps of Engineers	326.1	0.0	326.1	1
Pittman-Robertson	324.0	0.0	324.0	1
Resource Conservation & Development	250.0	0.0	250.0	1
Dingell-Johnson	0.0	65.0	65.0	<1
Historic Preservation	30.0	0.0	30.0	<1
Subtotal	<u>\$ 7,875.1</u>	<u>\$ 955.0</u>	<u>\$ 8,830.1</u>	<u>26</u>
Total	<u>\$31,489.0</u>	<u>\$2,700.0</u>	<u>\$34,189.0</u>	<u>100%</u>

APPENDIX B

TABLE 2

MICHIGAN DEPARTMENT OF NATURAL RESOURCES REQUESTED RECREATION CAPITAL OUTLAY BUDGET BY FUNDING SOURCE AND REGION, 1979-80

(THOUSANDS OF DOLLARS)

Region	Development	Land Acquisition	Total	Percent of Total
1	\$20,370.0	\$1,400.0 ¹	\$21,770.0	64%
A	14,973.5	—	14,973.5	44
B	1,329.0	—	1,329.0	4
C	4,067.5	400.0	4,467.5	13
2	5.5	—	5.5	<1
3	290.0	—	290.0	1
4	795.1	—	795.1	2
5	467.5	—	467.5	1
6	1,305.0	200.0	1,505.0	4
7	1,888.1	—	1,888.1	6
A	197.4	—	197.4	1
B	644.4	—	644.4	2
C	1,046.3	—	1,046.3	3
8	518.7	200.0	718.7	2
A	285.2	200.0	485.2	1
B	233.5	—	233.5	1
9	781.7	—	781.7	2
10	443.0	—	443.0	1
11	165.9	—	165.9	<1
12	1,065.4	—	1,065.4	3
13	1,047.6	—	1,047.6	3
14	1,575.5	—	1,575.5	5
Statewide	\$ 770.0	900.0	2,770.0	2
Total	\$31,489.0	\$2,700.0	\$34,189.0	100%

¹ \$1 million for land acquisition in Region 1 could not be broken down by subregion.

TABLE 3

MICHIGAN LOCAL RECREATION FACILITY ADEQUACY BY REGION

		Region																			
		1A	1B	1C	2	3	4	5	6	7A	7B	7C	8A	8B	9	10	11	12	13	14	Total
Local Park (5-25 Acres)	Number	399	215	43	25	22	24	54	55	71	16	10	77	17	18	49	5	20	7	31	1,158
	Pop (x 1000)/Fac	6.3	7.6	13.5	10.9	21.5	11.5	10.7	7.2	7.1	8.0	10.8	7.6	6.6	6.1	3.7	10.8	8.8	13.3	10.3	7.9
	Deficiency ⁵	—	—	15	2	25	4	4	—	—	—	—	1	—	—	—	—	—	2	1	—
District Park (26-100 Acres)	Number	40	52	22	9	16	8	14	29	35	11	4	35	13	11	25	4	9	12	12	361
	Pop (x 1000)/Fac	63.2	31.0	26.4	30.3	29.6	34.6	41.2	13.7	14.4	11.6	27.0	16.7	8.7	9.9	7.3	13.5	19.6	7.8	26.5	25.2
	Deficiency	11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Regional Park (100+ Acres)	Number	15	13	9	4	3	1	11	8	8	2	1	15	5	2	8	1	6	2	5	119
	Pop (x 1000)/Fac	168.6	125.0	64.6	68.3	157.7	277.0	52.5	49.8	62.9	64.0	108.0	39.1	22.6	54.5	22.9	54.0	29.3	46.5	63.6	76.6
	Deficiency	10	3	—	—	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hardball Fields	Number	170	270	42	34	42	30	38	28	76	15	11	85	14	26	42	6	35	19	31	1,014
	Pop (x 1000)/Fac	14.9	6.0	13.8	8.0	11.3	9.2	15.2	14.2	6.6	8.5	9.8	6.9	8.1	4.2	4.4	9.0	5.0	4.9	10.3	9.0
	Deficiency	252	2	55	12	37	16	58	38	8	6	7	13	5	—	—	3	—	—	22	504
Softball Fields	Number	396	305	79	38	75	45	123	146	262	39	20	157	28	25	70	8	49	26	84	1,975
	Pop (x 1000)/Fac	6.4	5.3	7.4	7.0	6.3	6.2	4.7	2.7	1.9	3.3	5.4	3.7	4.0	4.4	2.6	6.8	3.6	3.6	3.8	4.6
	Deficiency	447	238	115	52	83	47	69	—	—	4	16	38	10	11	—	10	10	5	22	1,062
Basketball Courts	Number	223	134	32	35	36	49	86	85	277	23	16	111	15	32	62	3	45	15	68	1,347
	Pop (x 1000)/Fac	11.3	12.2	18.2	7.8	13.1	5.7	6.7	4.7	1.8	5.6	6.7	5.3	7.5	3.4	3.0	18.0	3.9	6.2	4.7	6.8
	Deficiency	4,835	3,126	1,130	511	910	505	1,068	711	729	233	200	1,061	211	186	304	105	307	171	568	16,873
Tennis Courts	Number	322	343	76	66	84	96	162	93	138	27	27	232	58	34	107	7	90	18	122	2,099
	Pop (x 1000)/Fac	7.9	9.7	7.6	4.1	5.6	2.9	3.6	4.3	3.6	4.7	4.0	2.5	1.9	3.2	1.7	7.7	2.0	5.2	2.6	4.3
	Deficiency	943	472	215	71	153	43	127	106	114	37	27	61	—	21	—	20	—	29	37	2,456
Indoor Swimming Pools ¹	Number	146	72	31	14	30	6	22	36	29	1	2	22	5	2	1	5	11	7	20	462
	Pop (x 1000)/Fac	17.3	22.6	18.7	19.5	15.8	46.2	26.2	11.1	17.3	128.0	54.0	26.6	22.6	54.5	183.0	10.8	16.0	13.3	15.9	19.7
	Deficiency	107	91	27	13	17	22	36	4	21	12	9	37	6	9	17	0	7	2	12	449
Outdoor Swimming Pools ¹	Number	73	27	13	11	5	0	4	8	20	4	0	47	1	0	2	1	3	0	2	221
	Pop (x 1000)/Fac	34.6	60.4	44.7	24.8	94.6	—	144.3	49.7	25.2	32.0	—	12.5	113.0	—	91.5	54.0	58.7	—	159.0	41.4
	Deficiency	—	14	2	—	7	7	10	2	—	—	3	—	2	3	3	—	1	2	6	7
Artificial Skating Rinks	Number (1000 sq ft)	327.6	79.2	136.8	0	14.8	15.0	101.8	112.1	94.4	12.1	100.0	72.4	0	47.0	212.9	32.2	96.5	89.9	20.0	1,564.7
	Sq ft per person	0.130	0.049	0.238	—	0.031	0.054	0.175	0.286	0.189	0.094	0.909	0.123	—	0.435	1.111	0.588	0.556	1.000	0.063	0.172
	Deficiency	51	57	10	11	17	10	13	5	11	4	—	16	5	—	—	—	—	—	11	164
Recreation Centers	Number (1000 sq ft)	914.9	245.9	156.9	5.6	26.1	34.5	2,211.5	41.1	964.5	54.0	248.5	629.1	90.6	38.7	276.7	6.0	30.8	56.3	2,000.1	8,031.8
	Sq ft per person	0.357	0.152	0.270	0.020	0.550	0.125	3.850	0.103	2.000	0.417	2.500	1.111	0.833	0.357	1.429	0.111	0.175	0.588	5.000	1.1
	Deficiency	57	50	13	19	17	9	—	13	—	2	—	—	—	2	—	2	5	0	—	—
Outdoor Theater	Number	1	0	0	1	3	1	2	2	2	0	0	2	2	2	0	0	3	1	2	24
	Pop (x 1000)/Fac	2,529.0	—	—	273.0	157.7	277.0	288.5	199.0	251.5	—	—	293.0	56.5	54.5	—	—	58.7	93.0	159.0	379.6
	Deficiency	125	82	29	13	21	13	27	18	23	6	5	27	4	3	9	3	6	4	14	432
Shooting Ranges ²	Number	25	34	25	18	29	15	17	16	27	8	14	31	9	19	26	6	21	12	12	364
	Pop (x 1000)/Fac	101.3	48.3	23.0	15.2	16.3	18.4	34.3	24.8	18.8	16.0	7.7	18.5	12.5	5.7	7.0	9.0	8.4	7.7	26.5	25.0
	Deficiency	26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Golf Courses ³	Number	28	66	39	31	32	21	28	21	27	8	8	41	8	11	29	7	11	10	19	445
	Pop (x 1000)/Fac	90.3	24.7	14.9	8.8	14.0	13.2	20.6	19.0	18.6	16.0	13.5	14.3	14.1	9.9	6.3	7.7	16.0	9.3	16.7	20.5
	Deficiency	73	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

¹ Michigan Department of Public Health, Division of Water Supply, 1979 Public Swimming Pool Inventory. Includes municipal, township, county, or school owned pools.

² Michigan Department of Natural Resources, Recreation Services Division, 1978. A survey of Shooting and Archery Range Facilities in Michigan.

³ Department of Parks and Recreation, Michigan State University, 1974 Golf Course Inventory. Includes public and private owned golf courses.

* Figures represent the number of region residents (in thousands of people) per facility. Region 1A, for example, has 6,300 people per local park.

⁵ Figures represent the number of facilities needed in the region to meet the National Recreation and Park Association recreation facility standards.

APPENDIX B

TABLE 4

MICHIGAN RECREATION PARTICIPATIONS FOR SPECIFIC ACTIVITIES, 1976

	<u>Participations Per Resident</u>		<u>Participations Per Resident</u>
Competitive Sports		Fishing	
Baseball-Softball	4.3	Inland Lake	2.6
Bowling	3.8	Stream	1.2
Tennis	2.8	Great Lakes	0.7
Basketball	2.5	Ice Fishing	0.5
Golf	2.1	Total from Boat	2.3
Football	1.8	Total Not From Boat	2.7
Other	4.6	Other	0.0
Total	21.9	Total	10.0
Land-Mobile		Viewing Non-Competitive Events	
Bicycling	10.1	Motion Picture	2.4
Auto Riding for Pleasure	2.6	Live Concert	0.5
Snowmobiling	1.6	Lecture, Talk, Demonstration, Class	0.4
Horseback Riding	1.0	Art Show, Auction, Other Exhibits	0.3
Trail Biking	0.7	Live Play	0.3
Motorcycling for Pleasure on Roads	0.6	Stage Show or Program	0.3
Other Off-Road Vehicles	0.3	Other	0.1
Other	0.3	Total	4.3
Total	17.2	Visiting Sites	
Swimming		Park—No Specific Activity	1.1
Inland Lakes or Streams	3.9	Scenic Site	0.9
Pool—Not at a Private Home	3.8	Special Event—Carnival, Festival, Fair	0.8
Pool—Private Home	2.8	Museum, Educational Center	0.4
Great Lakes	0.8	Amusement Park or Site	0.3
Other	0.3	Zoo	0.3
Total	11.6	Library	0.2
Miscellaneous		Historic Site	0.2
Shopping for Pleasure	3.4	Other	0.1
Yard Work, Gardening for Pleasure	3.4	Total	4.3
Social Dancing	1.4	Winter-Related	
Sunbathing	0.6	Sledding, Tobogganing	1.4
Performing Music	0.5	Ice Skating	1.2
Attending Bingo or Similar	0.4	Snow-Centered	0.6
Photography	0.3	Downhill Skiing	0.5
Artistic Dancing	0.3	Cross-Country Skiing	0.1
Campfire	0.2	Other	0.1
Other	0.5	Total	4.0
Total	11.0	Attending Meetings or Centers for Pleasure	
Food-Related		Religious, Church	1.7
Going Out to Eat or Drink for Pleasure	8.5	Youth-Oriented	1.0
Picnicking	1.5	Civic, etc.	0.6
Other	0.0	Other	0.3
Total	10.0	Total	3.6
On-Foot		Watercraft	
Going for a Walk	3.3	Power Boating	1.4
Jogging for Pleasure	1.2	Water Skiing	0.7
Hiking	1.1	Sailing	0.4
Backpacking	0.1	Canoeing	0.4
Other	0.1	Rowing	0.3
Total	5.8	Other	0.1
		Total	3.3

APPENDIX B

TABLE 4
Continued

	<u>Participations Per Resident</u>
Other Games	
Play Activities—Away From Home	1.1
Roller Skating	0.9
Health Spa-Body Building	0.6
Table Games	0.3
Other	0.3
Total	3.2
Viewing Competitive Events	
Viewing Athletics	2.8
Viewing Motor Vehicle Racing	0.1
Viewing Horse Racing or Competition	0.1
Other	0.1
Total	3.1
Shooting Sports	
Big Game Hunting	0.8
Other Hunting	1.4
Skill Shooting	0.6
Other	0.1
Total	2.9
Camping	
Primitive Campground—Tent	0.3
Developed Campground—Tent	0.7
Primitive Campground—Vehicle Unit	0.4
Developed Campground—Vehicle Unit	1.1
Other	0.1
Total	2.6
Nature-Related	
Nature Walk	0.8
Collecting Natural Objects	0.3
Nature Study	0.3
Wild Food Hunting	0.2
Wildlife Feeding	0.2
Other	0.1
Total	1.9

TABLE 5
**MICHIGAN PARTICIPATION IN SELECTED
ACTIVITY CATEGORIES BY PROVIDER, 1976**

	<u>Percent of Provider Total</u>
Michigan Local Government	
Competitive Sports	35.1
Swimming	12.0
Viewing Competitive Events	9.1
Visiting Sites	7.2
Fishing	3.9
On-Foot Activities	3.6
Michigan DNR	
Camping	16.9
Swimming	15.8
Fishing	10.2
Land-Mobile (except bicycling)	8.5
Shooting Sports	7.2
Watercraft	6.2
Federal in Michigan	
Land-Mobile (except bicycling)	32.0
Camping	17.9
Swimming	9.4
Nature-Related	9.1
Shooting Sports	8.5
Michigan Other Public Designated	
Fishing	34.2
Swimming	15.5
Watercraft	12.6
Winter-Related	8.2
Michigan Public Not Designated	
Bicycling	53.4
Land-Mobile (except bicycling)	19.0
On-Foot Activities	17.6

APPENDIX B

TABLE 5
Continued

	<u>Percent of Provider Total</u>
Michigan Private	
Competitive Sports	19.3
Food-Related	12.9
Swimming	10.9
Yard Work, Gardening for Pleasure	5.5
Viewing Non-Competitive Events	5.3
Shopping for Pleasure	5.1
Attending Meetings or Centers for Pleasure	4.4
Out of Michigan Public	
Visting Sites	32.3
Swimming	11.5
On-Foot Activities	10.5
Out of Michigan Private	
Food-Related	22.7
Swimming	12.7
Visiting Sites	12.7

TABLE 6
**MICHIGAN INDOOR AND OUTDOOR
RECREATION PARTICIPATION
BY PROVIDER, 1976**

	<u>Percent of Participations</u>	
	<u>Indoor</u>	<u>Outdoor</u>
Michigan Local Government	31%	69%
Michigan DNR	1	99
Federal in Michigan	1	99
Michigan-Other-Public Designated	11	89
Michigan Public Not Designated	3	97
Michigan Private	44	56
Out-of-Michigan Public	9	91
Out-of-Michigan Private	43	57

TABLE 7
**PROJECTED MICHIGAN POPULATION
CHANGE BY REGION, 1975-2000¹**

<u>Population (thousands)</u>				
<u>Region</u>	<u>1975</u>	<u>2000</u>	<u>Change</u>	<u>Percent Change</u>
1	4,740	5,103	364	7.7%
A	2,529	2,183	−346	−13.7
B	1,630	1,929	299	18.4
C	581	991	411	70.7
2	273	308	35	12.7
3	473	535	62	13.1
4	277	343	66	23.7
5	577	644	67	11.7
6	398	507	109	27.4
7	740	914	175	23.6
A	503	555	52	10.3
B	128	182	54	42.1
C	108	177	69	63.5
8	699	898	198	28.3
A	586	719	133	22.6
B	113	179	66	57.9
9	109	170	61	56.0
10	183	290	108	58.9
11	54	57	3	6.0
12	176	227	51	28.7
13	93	116	23	24.3
14	318	393	75	23.5
Regions				
Combined	9,110	10,505	1,395	15.3%

¹ Michigan Department of Management and Budget, Office of the Budget, 1978. *Population Projections for Michigan to the Year 2000*.

APPENDIX B

TABLE 8

CHANGES IN USE OF PERSONAL TIME FOR UNITED STATES URBAN RESIDENTS BY SEX, EMPLOYMENT, AND MARITAL STATUS, 1965-75

(Hours Per Week)

	<u>Employed Men</u>		<u>Employed Women</u>		<u>Housewives</u>		<u>Total</u>
	<u>Married</u>	<u>Single</u>	<u>Married</u>	<u>Single</u>	<u>Married</u>	<u>Single</u>	<u>Sample</u>
1965							
Urban Data							
Sleep	53.1	50.6	53.8	52.6	53.9	58.8	53.3
Work for Pay	51.3	51.4	38.4	39.8	0.5	1.6	33.0
Family Care	9.0	7.7	28.8	20.6	50.0	45.7	25.4
Personal Care	20.9	22.2	20.3	21.7	22.6	23.0	21.5
Free Time	33.7	36.1	26.7	33.3	41.0	38.9	34.8
Organizations	2.6	3.6	1.4	3.7	3.4	3.4	2.8
Media	17.1	13.9	10.7	11.1	15.3	19.1	14.7
Social Life	7.2	10.4	7.9	9.6	12.6	10.2	9.4
Recreation	1.4	1.3	0.6	0.5	0.6	1.1	0.9
Other Leisure	5.4	6.9	6.1	8.4	9.1	5.1	7.0
TOTAL	168.0	168.0	168.0	168.0	168.0	168.0	168.0
1975							
Urban Data							
Sleep	53.4	54.1	55.1	54.3	56.8	58.6	54.7
Work for Pay	47.4	40.0	30.1	38.8	1.1	0.0	32.5
Family Care	9.7	9.0	24.9	16.5	44.3	42.8	20.5
Personal Care	21.4	20.0	26.2	21.9	21.4	19.2	21.8
Free Time	36.1	44.9	31.7	36.4	44.4	47.4	38.5
Organizations	3.7	4.8	2.2	4.4	4.8	3.0	3.8
Media	18.9	18.5	15.6	14.5	20.4	27.2	18.2
Social Life	6.4	8.9	6.6	8.9	10.1	9.1	7.8
Recreation	1.3	4.1	0.8	0.5	0.7	0.4	1.8
Other Leisure	5.8	8.6	6.5	8.1	8.4	7.7	7.4
TOTAL	168.0	168.0	168.0	168.0	168.0	168.0	168.0

John P. Robinson, "Changes in Americans' Use of Time: 1965-1975, A PROGRESS REPORT," Communication Research Center, Cleveland State University, August, 1977. Reprinted with permission of the author and the Center.

APPENDIX C

DIRECTORY OF GOVERNMENTAL UNITS AND PRIVATE ORGANIZATIONS

Federal

1. Pictured Rocks National Lakeshore
P.O. Box 40
Munising, Michigan 49862
2. Sleeping Bear National Lakeshore
400 Main Street
Frankfort, Michigan 49635
3. Isle Royale National Park
87 N. Ripley Street
Houghton, Michigan 49931
4. Hiawatha National Forest
P.O. Building
Escanaba, Michigan 49829
5. Huron Manistee National Forest
421 South Mitchell Street
Cadillac, Michigan 49601
6. Ottawa National Forest
P.O. Box 468
Ironwood, Michigan 49938
7. Seney National Wildlife Refuge
Star Route
Seney, Michigan 49883
8. Shiawassee National Wildlife Refuge
6975 Mower Road, Route #1
Saginaw, Michigan 48601
9. Heritage Conservation and Recreation
Service (HCRS)
Lake Central Region
Federal Building
Ann Arbor, Michigan 48107

State

1. Michigan Department of Commerce
Travel Bureau
5th Floor—Law Building
P.O. Box 30226
Lansing, Michigan 48909
2. Office of State Exposition and Fairgrounds
1120 W. State Fair Avenue
Detroit, Michigan 48203
3. Michigan Department of Natural Resources
Stevens T. Mason Building
P.O. Box 30028
Lansing, Michigan 48909
 - Information and Education Division
Mason Building—7th Floor

- Fisheries Division
Mason Building—6th Floor
- Forest Management Division
Mason Building—5th Floor
- Parks Division
Mason Building—5th Floor
- Recreation Services Division
Mason Building—5th Floor
- Waterways Division
General Office Building—3rd Floor
Secondary Complex
- Wildlife Division
Mason Building—6th Floor
- Mackinaw Island State Park Commission
General Office Building—3rd Floor
Secondary Complex

4. Michigan Regional Planning and Development
Agencies
 - Region 1—Southeast Michigan Council of
Governments
8th Floor, Book Building
1249 Washington Blvd.
Detroit, Michigan 48226
 - Region 2—Region 2 Planning Commission
120 W. Michigan Avenue
Jackson, Michigan 49201
 - Region 3—Southcentral Michigan Planning
Council
Connors Hall
Nazareth College
Nazareth, Michigan 49074
 - Region 4—Southwestern Michigan Regional
Planning Commission
2907 Division Street
St. Joseph, Michigan 49085
 - Region 5—GLS Region V Planning and
Development Commission
1602 W. Third Avenue
Flint, Michigan 48504
 - Region 6—Tri-County Regional Planning
Commission
2722 East Michigan Avenue
Lansing, Michigan 48912

APPENDIX C Continued

Region 7—East Central Michigan Planning & Development Regional Commission
500 Federal, P.O. Box 930
Saginaw, Michigan 48607

Region 8—West Michigan Regional Planning Commission
1204 People's Building
60 Monroe at Ionia
Grand Rapids, Michigan 49502

Region 9—Northeast Michigan Council of Governments
131 Shipp Street, P.O. Box 457
Gaylord, Michigan 49735

Region 10—Northwest Michigan Regional Planning and Development Commission
2334 Aero Park Court
Traverse City, Michigan 49684

Region 11—Eastern Upper Peninsula Regional Planning & Development Commission
P.O. Box 478
Sault Ste. Marie, Michigan 49783

Region 12—Central Upper Peninsula Planning & Development Regional Commission
2415—14th Avenue, South
Escanaba, Michigan 49829

Region 13—Western Upper Peninsula Planning & Development Region Commission
P.O. Box 365
Houghton, Michigan 49931

Region 14—West Michigan Shoreline Regional Development Commission
The Torrent House
315 W. Webster Avenue
Muskegon, Michigan 49440



● Region Offices

1. Detroit
 - a. Wayne Co.
 - b. Oakland/Macomb Cos.
 - c. Outer counties
2. Jackson
3. Kalamazoo-Battle Creek
4. Benton Harbor-St. Joseph
5. Flint
6. Lansing
7. Saginaw-Bay City
 - a. Central
 - b. Thumb
 - c. North
8. Grand Rapids
 - a. South
 - b. North
9. Alpena
10. Traverse Bay
11. Sault Ste. Marie
12. Escanaba-Marquette-Iron Mtn.
13. Houghton-Ironwood
14. Muskegon

Private

1. Michigan Recreation and Park Association (MRPA)
ATGA Building—Suite 3
6425 South Pennsylvania Avenue
Lansing, Michigan 48910
2. National Recreation and Park Association
600 E. Algonquin
Des. Plains, Illinois 60016



index

INDEX

	Page		Page
Boat liveries	51	National wilderness areas	47
Boating resources by region	54	National wildlife refuges	46
Camping resources by region	54	Natural areas	37
Charter boats	51	Natural beauty roads	38
Citizen recreation surveys	3	Natural rivers	36
Coastal management	34	Park capital outlay expenditures by region	54
Commercial land	50	Park operation expenditures by region	53
Dingell-Johnson Act	34	Parks Division	18
Downhill skiing areas	50	Pittman-Robertson Act	34
Facility standards	59	Plan coordination	4
Farmland and open space	36	Planning approach	2
Fee fishing	51	Population change, implications for participation	74
Fisheries	48	Private agencies	59
Fisheries Division	17	Private campgrounds	50
Forest Management Division	15	Public action	1
Great Lakes	43	Public meetings	4
Great Lakes submerged lands	35	Public opinion surveys	3
Heritage Conservation and Recreation Service	34	Public park land by region	52
H.U.D. 701	34	Public recreation land by region	51
Information concerns	2	Public utility companies	50
Inland lakes and streams	35	Purpose of document	1
Leisure time trends	78	Recreation Services Division	21
Local Government Administrators Survey	3	Rivers and streams	44
Local government lands	49	Sand dune protection and management	36
Michigan Local Recreation Survey	56	School-community recreation	49
capital outlay expenditures	58	Schools	59
employment	56	Shorelands protection and management	35
operations expenditures	56	Snowmobile leases on private land	51
revenue sources	56	Soil erosion and sedimentation control	35
Michigan 1976 Recreation Survey	61	State Fair	26
how Michigan residents recreate	63	State forests	47
recreation spending by Michigan residents	72	State game and wildlife areas	48
recreation providers	69	State parks and recreation areas	48
survey method	61	United States Fish and Wildlife Service	33
when Michigan residents recreate	67	United States Forest Service	32
where Michigan residents recreate	67	Water access facilities	48
who in Michigan recreates	61	Water resources by region	54
National forests	45	Waterways Division	19
National lakeshores	45	Wilderness areas	37
National park	45	Wildlife Division	14
National Park Service	32	Youth camps	51

